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Kimberlite and Base Metal Exploration Targets, Derived from Overburden Heavy Mineral Data, Schreiber Area, Northwestern Ontario

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Kimberlite and Base Metal Exploration Targets, Derived from Overburden Heavy Mineral Data, Schreiber Area, Northwestern Ontario

by

T.F. Morris, S.A. Pitre and T.M. Larose

2002

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*Miscellaneous Release-Data 96

Data release of kimberlite and base metal exploration targets, derived from overburden heavy mineral data, Schreiber area, northwestern Ontario; by T.F. Morris. This release consists of data related to kimberlite indicator minerals, metamorphic or magmatic massive sulphide indicator minerals, gold grains and carbonatite indicator minerals from modern alluvium and till samples collected in an area between Schreiber and Terrace Bay, northwestern Ontario. The data are being released in conjunction with Open File Report 6074. Files on this release include: an introduction explaining acronyms and abbreviations used; comments from Overburden Drilling Management Limited regarding specific samples (these two files are in Microsoft Word (.doc) and Rich Text Format (.rtf)); sample site locations; sample processing data; detailed gold grain summary; kimberlite indicator minerals; kimberlite indicator mineral picking comments; metamorphic or magmatic massive sulphide indicator minerals; heavy mineral assemblage remarks and summary of picked grains; and summary of microprobe data (these 9 data sets are in ASCII (.txt), Microsoft Excel (.xls) and comma delimited (.csv) formats).

These files are on one 3.5 inch MS-DOS diskette, available separately from this report.

ABSTRACT

This report provides data and preliminary interpretations on the types and distribution of kimberlite indicator minerals (KIMs), metamorphic or magmatic massive sulphide indicator minerals (MMSIMs® *), gold grains and carbonatite indicator minerals from modern alluvium and till samples collected in the Schreiber area, northwestern Ontario. This data can be used to focus exploration efforts for kimberlite (diamonds) and base metal deposits. A total of 235 modern alluvium and 53 subglacial till samples were collected from across the study area.

In addition to the regional survey, additional overburden samples were collected from the Cameco Gold Inc. Empress Hill gold project to verify gold grain values obtained from samples collected during the summer of 1999. Also, samples were collected from a sand and gravel pit west of Hays Lake to assess reported gold assay values obtained from aggregate samples.

Four areas and 5 individual sites are proposed for kimberlite exploration in the Schreiber area. The suggested targets are based on the recovery of important KIMs such as 2 "G10" and 24 "G9" Cr-pyrope garnets and 2 inclusion field chromites, plus the distribution and concentration of other KIMs.

Based on the recovery of 105 gahnite grains, plus the distribution and concentration of other metamorphic and/or magmatic sulphide indicator minerals, 8 areas and 11 individual sites are proposed for base metal exploration in the Schreiber area. Of the 8 proposed exploration areas, the Hays Lake area is suggested as a potential PGE exploration target.

Very few gold and carbonatite-related grains were recovered from overburden samples in the Schreiber area. Because of this, it was not possible to make recommendations for gold or rare earth element exploration targets.

The Schreiber sampling program was a westward extension of a similar sampling program completed in the Killala Lake area the previous summer. As the field sampling and laboratory processing procedures were the same for both projects, it is possible to combine the heavy mineral data sets from both areas. By combining the data sets, several areas and individual sites for the entire region are proposed for diamond and base metal exploration.

* MMSIM is a registered trademark of Overburden Drilling Management Limited, Nepean, Ontario.

INTRODUCTION

Study Location

The Schreiber study area is located 40 km west of Marathon in northwestern Ontario and includes the towns of Schreiber and Terrace Bay (Figure 1). The study area is represented on 2, 1:50 000 scale National Topographic System (NTS) map sheets, namely the Schreiber (42 D/14) and Dickison Lake (42 E/3) sheets. The present study area adjoins the 2, 1:50 000 scale NTS map sheets associated with the Killala Lake study, located directly to the east (Morris et al. 2000).

Project History and Purpose

Since 1993, the Ontario Geological Survey (OGS) has conducted a series of overburden mapping and sampling programs to assess the diamond potential of the Kapuskasing Structural Zone (KSZ; Figure 1). Kimberlite is recognized as the primary host rock for diamond. A suite of heavy minerals (Cr-pyrope garnet, chromite, Mg-rich ilmenite, Cr-diopside and forsteritic olivine) are commonly associated with kimberlite and are referred to as kimberlite indicator minerals (KIMs). The types and distribution of KIMs recovered from these programs clearly demonstrate that the KSZ has excellent potential for hosting diamond-bearing kimberlite (Morris, Murray and Crabtree 1994; Morris, Crabtree and Pianosi 1997; Morris, Crabtree and Averill 1998; Morris, Crabtree et al. 1998; Morris 1999a; Stephenson, Morris and Crabtree 1999). Since the release of the OGS studies, diamond-bearing rock and kimberlite have been discovered in the Wawa area (KWG Resources Inc., Press Releases, 20/08/97, 31/07/00; CANABRAVA Diamond Corporation, Press Release, 09/12/97; Band-Ore Resources Ltd., Press Release 02/05/00, 31/07/01; Pele Mountain Resources Inc., Press Releases 07/07/00, 03/01/01, 06/09/01; Dumont Nickel Inc., Press Release, 21/08/00).

Following the success of the KSZ overburden mapping and sampling programs, plans to assess similar structures in other parts of Ontario were made. One such area, the Trans-Superior Tectonic Zone (TSTZ), extends from Michigan north-northeast into Ontario, west of Marathon (Figure 1). Kimberlites straddle the structure within Michigan (Cannon and Mudrey 1981) and ultramafic lamprophyres, which may belong to the kimberlite "clan" (Rock 1990), are recognized in association with the TSTZ within Ontario (Sage 1993). The TSTZ represents a fault system that has accommodated emplacement of mantle material (Sage 1999). To evaluate the kimberlite potential of the TSTZ in Ontario, an area between the towns of Marathon and Terrace Bay was chosen for overburden mapping and stream sediment, and till sampling (Morris 1999b). The results of this study produced several kimberlite exploration targets (Morris et al. 2000).

In addition to KIMs, overburden samples were processed for metamorphic or magmatic massive sulphide indicator minerals (MMSIM®), gold grains and carbonatite indicator minerals. The MMSIMs® are associated with 3 main types of base metal deposits: 1) volcanosedimentary massive sulphides in high grade regional metamorphic

Figure 1: Location of study area.

terrain; 2) skarn and greisen deposits; and 3) magmatic Ni-Cu sulphides (Averill 1999). The composition of gahnite, a rare and important MMSIM® associated with metamorphosed volcanosedimentary massive sulphide deposits, can also be used to indicate the presence of rare-element pegmatite (Morris et al. 1997). The presence and distribution of MMSIMs® and gold grains recovered from overburden sampling programs completed over the KSZ defined several important base metal, rare-element pegmatite and gold exploration targets (Morris, Murray and Crabtree 1994; Morris, Crabtree and

Pianosi 1997; Morris, Crabtree and Averill 1998; Morris, Crabtree et al. 1998; Stephenson, Morris and Crabtree 1999; Morris et al. 2000).

In addition to the heavy mineral program, overburden geochemistry was determined for humus samples, and "B" and "C" horizon material obtained from subglacial tills. The geochemical data sets for material collected in the Wawa and Schreiber-Killala Lake areas were evaluated against suites of elements associated with specific types of mineralization. From this, several kimberlite, base metal, gold and rare element carbonatite exploration targets were defined (Morris 1999a; Morris 2001a; Morris 2001b).

This report summarizes the types, concentrations and distribution of KIMs, MMSIMs®, gold grains and carbonatite related heavy minerals recovered from 235 modern alluvium and 53 subglacial till samples. Recommendations for kimberlite and base metal exploration are proposed. It was not possible to propose gold and carbonatite exploration targets due to the low numbers of associated grains. The data is summarized in Morris (2002) within which Appendices 1 to 9 consist of the following ASCII (.txt) and Microsoft Excel (.xls) files:

Intro	Acronyms and abbreviations
Appendix 1	Sample site locations
Appendix 2	Sample processing data
Appendix 3	Sample processing data continued
Appendix 4	Detailed gold grain summary
Appendix 5	Kimberlite indicator minerals
Appendix 6	Kimberlite indicator mineral picking remarks
Appendix 7	Metamorphic or magmatic massive sulphide indicator minerals
Appendix 8	Heavy mineral assemblages, summary of picked grains
Appendix 9	Summary of microprobe data

Appendix 10 consists of the following Microsoft Word (.doc) file:

Appendix 10	Summary remarks

Physiography

The study area is located south of the Great Lakes-Hudson Bay drainage divide and all surface drainage flows south into Lake Superior. Five major drainage basins are located within the study area. Flow from these basins is through the Pays Plat, Whitesand and Aguasabon rivers and Big Duck and Blackbird creeks.

Much of the area lies within the Abitibi Uplands subregion of the James physiographic region (Bostock 1976). This region is underlain by crystalline Archean rocks and characterized by a broad rolling surface that rises gently from the Hudson Bay Lowland. Locally, several distinctive crosscutting faults occur. The Gravel River-Kamuck River fault, the most prominent of these, has a floor width averaging 60 m and vertical valley walls up to 150 m high (Carter 1988). Along the shoreline of Lake Superior the study area falls within the Port Arthur Hills subregion of the James

physiographic region (Bostock 1976). This subregion consists of massive and rugged hills with relief in excess of 150 m (Gartner 1979).

REGIONAL GEOLOGY

Bedrock Geology

Most of the study area straddles a complex suite of rocks associated with the Quetico and Wawa subprovinces of the Canadian Shield (Harcourt 1939; Mason 1981a-e; Carter 1988; Ontario Geological Survey 1991; Figure 2). Both subprovinces consist of Neo- to Mesoarchean (2.5 to 3.4 Ga) intrusive and supracrustal rocks. Several islands within Lake Superior are also included within the study area. The bedrock of these islands, and in places along the north shore of Lake Superior, consists of Late Precambrian (1086 to 1107 Ma) to Middle Precambrian (1.6 to 2.5 Ga) sedimentary rocks.

Neo- to Mesoarchean intrusive bedrock of the Quetico subprovince consists of a gneissic tonalite suite and muscovite-bearing granitic to granodiorite rocks. Quetico supracrustal bedrock consists of a metasedimentary suite. Neo- to Mesoarchean intrusive rocks of the Wawa subprovince include a massive granodiorite to granite suite, a gneissic tonalite suite and mafic and ultramafic rocks (gabbro, anorthosite, ultramafics). Wawa subprovince supracrustal rocks of the same age include felsic to intermediate metavolcanic rocks and mafic to intermediate metavolcanic rocks.

There are 2 areas of sedimentary rock belonging to the Gunflint Formation of the Middle Precambrian (1.6 to 2.5 Ga) Animikie Group (Carter 1988). These are too small to illustrate on Figure 2, however, they occur along the north shore of Lake Superior west of Schreiber. Offshore, several islands consist of sedimentary rocks belonging to the Late Precambrian (1086 to 1107 Ma) Sibley Group (Ontario Geological Survey 1991).

Cross-cutting these rocks are at least 2 dike swarms. The oldest is the northeasterly striking Marathon dike swarm that was emplaced around 2.17 Ga (Osmani 1991). The younger Pukaskwa dike swarm is related to the volcanic rocks of the Keewenawan Supergroup that were deposited within the Midcontinent Rift between 1109 and 1086 Ma (Osmani 1991).

The study area straddles the western edge of the TSTZ, a prominent structural feature that extends north-northeast from Michigan. In Michigan, several kimberlites have been identified within the TSTZ. This tectonic zone was emplaced between 1.0 to 1.2 Ga (Sage 1991a). During this time several diatreme structures within the Killala Lake study area (Morris et al. 2000) were emplaced (Sage 1982). These include the Prairie Lake carbonatite complex (Sage 1987), the Killala Lake alkalic complex (Sage 1988) and the Coldwell alkalic complex (Sage 1991a).

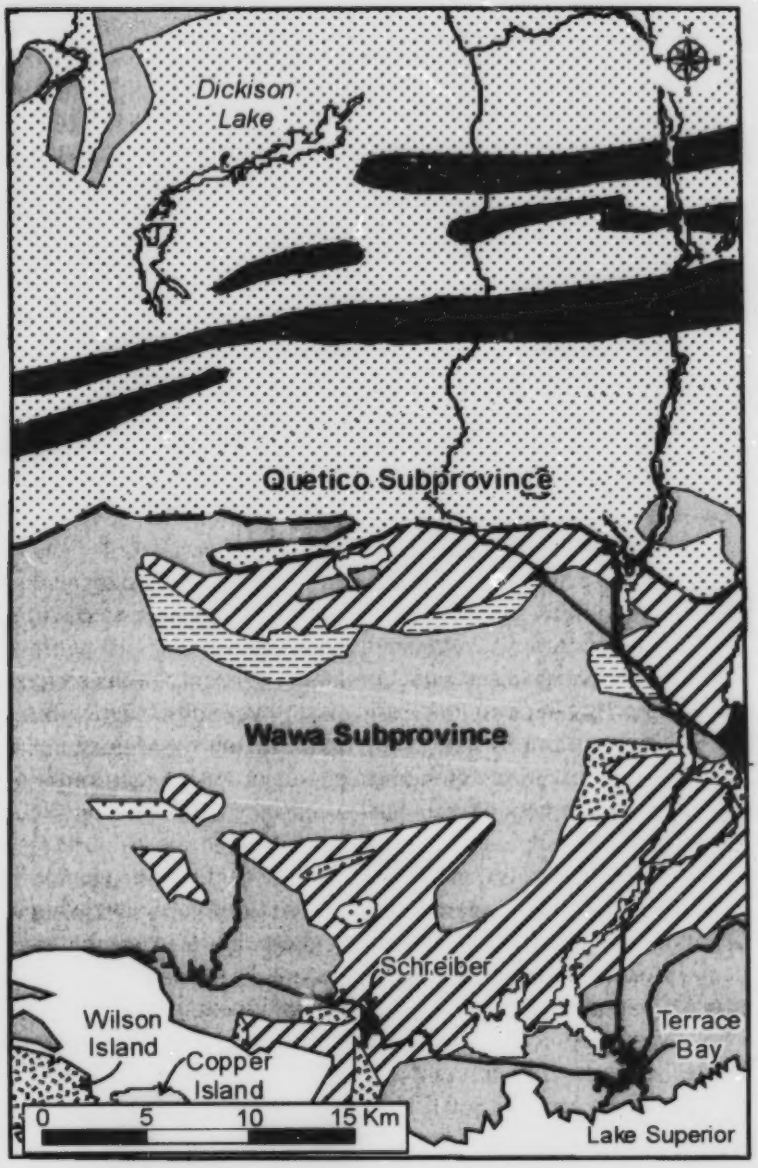


Figure 2. Bedrock geology of the Schreiber area (from Ontario Geological Survey 1991).

Overburden Geology

All glacial landforms and related materials within the study area were deposited during the Wisconsinan glaciation. Mapping of Quaternary materials has been completed at a scale of 1:1 000 000 (Barnett et al. 1991), 1:506 880 (Zoltai 1965) and 1:100 000 (Gartner 1979).

Ice flow across the study area varied between 165° to 238° with an average of 194°. Direction of ice flow is defined by the orientation of striae, grooves, chattermarks and streamlined bedrock forms. In general, more southerly flow was restricted to bedrock controlled troughs such as those associated with the Aguasabon River and Long Lake, whereas more southwesterly flow occurred across topographically higher terrain. Unlike the Killala Lake area immediately to the east (Morris et al. 2000), cross-cutting striae were not observed. A subglacial till (< 1 m thick) deposited by regional ice flow covers most of the study area. The clasts within the till reflect local bedrock lithologies and the matrix does not react with 10% HCl.

Landforms and materials associated with ice retreat are located primarily within bedrock controlled valleys. Ice-contact stratified drift is associated with recessional moraines, dead-ice topography, eskers and valley fills. Flow till (with well developed flow structure) and poorly-sorted sand containing a variety of clast types (from local material to Hudson Bay derived Paleozoic clasts) were observed within recessional moraines, dead-ice topography and valley fills. The matrix of this material reacts strongly with 10% HCl. Several well-developed eskers occur within the Long Lake valley. Sections through these eskers reveal well-sorted sand and coarse gravel.

Glaciofluvial channels consisting of well-sorted sands to coarse boulders, primarily of local provenance, were identified within several narrow bedrock controlled valleys. Glaciolacustrine materials were deposited within 2 different types of environments. North of Lake Superior, fine-grained sand was deposited where glacial meltwater was trapped between the ice margin and local, topographically higher ground. Closer to Lake Superior, coarse-grained glaciolacustrine materials were deposited within bedrock controlled valleys in association with the various glacial lakes occupying the Lake Superior basin (Farrand 1960). The elevation of each of these lakes is defined by terrace surfaces, beach ridges and wave-cut benches. Post-glacial features such as colluvium and modern shoreline features (such as bars and spits) were also observed.

METHODS

Material Sampling

A total of 235 modern alluvium and 53 subglacial till samples were collected and submitted for heavy mineral analysis. From the previous, adjacent study in the Killala Lake area, several different bedrock types were collected and processed to determine heavy mineral assemblages (Morris et al. 2000). Although the data is not repeated here, the results are useful in interpreting overburden heavy mineral data for the Schreiber area.

Sample numbers, sample types, the bedrock type over which the sample was taken and locations (UTM coordinates, NAD 27 projection, Zone 16) are summarized in Appendix 1 (this report) and in Morris (2002, Appendix 1).

Modern alluvium was chosen as the primary sampling media as it is commonly used as a means of gaining a fast, relatively inexpensive heavy mineral signature for individual drainage basins. The heavy mineral signature obtained from modern alluvium is a product of the erosion of both bedrock and overburden, and the subsequent transportation and deposition of the eroded material. A more detailed discussion of the controls on these processes can be found in Morris, Murray and Crabtree (1994), Morris (1995) and Morris and Kaszycki (1997). It is important to note, however, that lakes within drainage basins act as sediment traps, restricting the down drainage transport of heavy minerals. Therefore, when modern alluvium sites were chosen for this study an attempt was made to maximize the length of stream section between the sample site and a lake. This maximizes the area of drainage basin being sampled by the stream.

To maintain continuity with the data collected from previous studies (Morris, Murray and Crabtree 1994; Morris, Crabtree and Pianosi 1997; Morris, Crabtree and Averill 1998; Stephenson et al. 1999; Morris et al. 2000) similar sampling procedures were used. Modern alluvium was collected from bars or sediment traps in streams where heavy minerals tend to concentrate. Material was sifted through a 7 mm mesh, steel sieve to exclude the coarse fraction. A minimum of 10 kg of the less than 7 mm sized material was collected at each site. At sites where the material was fine-grained, a minimum of 15 kg of less than 7 mm sized material was collected to ensure that a sufficient amount of heavy mineral concentrate was collected.

A sample of the greater than 7 mm sized fraction was collected to determine pebble lithology. This data has previously been reported (Morris 2001a and 2001b) and is not repeated here.

Till samples were collected from subglacially derived tills. Subglacial tills consist of primarily local materials and are ideal for till sampling programs (Morris and Kaszycki 1997). At each till sample site 3, 200 g sub-samples were collected; one each of humus and till "B" and "C" horizon material. These samples were submitted for geochemical

analysis. The procedures for processing these materials and associated results are reported in Morris (2001a and 2001b).

In addition, till "C" horizon material was passed through a 7 mm mesh, steel sieve, to exclude the coarse fraction. Pebble lithologies were determined from this coarse fraction and are reported in Morris (2001a and 2000b). Ten kilograms of till "C" horizon material that passed through the 7 mm sieve was collected and submitted for heavy mineral analysis.

Observations made at each sample site included a site description (sample site material type, surrounding material type, presence of bedrock or boulders, topography, channel surface slope, stream flow, drainage of surrounding area and vegetation) and material description (texture, pebble abundance, size, shape, surface features and types and bar form). A more detailed explanation regarding the types of observations made are reported in Morris and Kaszycki (1997).

Sampling Strategies

Orientation Surveys

From the previous, adjacent study in the Killala Lake area, orientation surveys were completed over the Prairie Lake Carbonatite, the Cameco Gold Inc. gold property at Empress Hill and the base metal property at Spider Lake (Morris et al. 2000). Both modern alluvium and till samples were collected. Although the data is not repeated here, the results are useful in interpreting regional overburden heavy mineral data for the Schreiber area.

Due to the cost of processing samples for heavy minerals and because of the success of the orientation surveys completed in 1999, only 2 orientation surveys were completed for the Schreiber area. Samples and sample locations are summarized in Appendix 1 (this report). Data derived from these orientation samples are excluded from the regional surveys.

Cameco Gold Inc., Empress Hill Property

Three modern alluvium and 1 additional till sample was collected from the Cameco Gold Inc. gold property at Empress Hill. These samples were collected to validate previous, exceptional gold grain results (Morris et al. 2000).

Hays Lake Aggregate Pit

In 1936, Mill Producers Limited of Toronto released a "gold sand assay" report for 55 sand and gravel samples collected from an aggregate pit located west of Hays Lake (unpublished press release). The assay values reported varied from "nil" to 0.28 oz per cubic yard. At the request of the Resident Geologist Office in Thunder Bay, 3 samples of

aggregate were collected from fresh exposures within this pit. The purpose of this sampling was to try to validate the previously reported gold assay values.

Regional Survey

A regional survey provides data on the types, distribution and relative concentration of heavy minerals in a given region. The focus of the 2000 regional sampling program was to provide information for the Schreiber area on the types, distribution and concentration of KIMs, MMSIMs®, gold and carbonatite heavy minerals. The number of modern alluvium samples collected was predetermined by budget considerations and samples were collected from over as broad an area as possible. For till sampling, a hypothetical 5 km^2 grid was placed over the study area and as many of the grid squares as possible were sampled.

After evaluating this data for kimberlite and mineral exploration targets within the Schreiber area, this data was combined with heavy mineral data from the adjacent Killala Lake project (Morris et al. 2000). This data set identifies those areas and sites with heavy mineral signatures deemed significant from over a broader region.

Heavy Mineral Recovery and Identification

All samples were sent to Overburden Drilling Management Ltd. (ODM) in Nepean, Ontario for processing to isolate KIMs, MMSIMs®, gold grains and carbonatite heavy minerals. This procedure is discussed in detail elsewhere and will not be repeated here (Morris and Kaszycki 1997). Composition of critical indicator minerals was determined at the Ontario Geoscience Laboratories (OGL) through microprobe analysis. Sample processing data is summarized in Morris 2002 (Appendices 2 and 3).

A detailed gold grain summary is provided in Morris 2002 (Appendix 4). The physical appearance of each gold grain was evaluated and classified as either pristine, modified or reshaped. Due to gold's malleability, grain shape is transformed during transport by glacial ice (DiLabio 1990). Therefore, a reshaped grain is more likely to have been transported a greater distance from its source than a pristine one.

During sample processing, 7 types of KIMs are recovered: Cr-pyrope garnet; Cr-poor megacrystic pyrope garnet, eclogitic pyrope-almandine garnet; Cr-diopside; Mg-rich ilmenite; chromite; and forsteritic olivine (Morris 2002, Appendices 5 and 6).

Processing also recovered several types of MMSIMs®. Types of MMSIMs® and associated bedrock type are discussed in Averill (1999) and summarized in Morris et al. (2000). MMSIMs® recovered from the current study are summarized in Morris 2002 (Appendix 7). In addition to the individual MMSIMs®, each sample's heavy mineral assemblage was described (Morris 2002, Appendix 8). Potential KIM grains were sent to the OGL for microprobe analysis to determine precise grain composition (Morris 2002, Appendix 9).

In addition to the Cr-diopsides, chromites and olivines, processed as KIMs, MMSIMs® such as gahnite, ruby corundum, spinel, grossular, spessartine, some orthopyroxenes and rutile were also processed through the microprobe (Morris 2002, Appendix 9). The calibration routine and operating conditions for the microprobe are summarized in GEO LABS (2000).

Indicator Minerals

As the understanding of indicator mineral geochemistry evolves, it is inevitable that changes regarding the application of indicator mineral geochemistry to diamond and base metal exploration will occur. Because of this, it will not always be possible to make direct comparisons of indicator mineral interpretations between OGS Open File Reports (OFRs) from year to year. Although every attempt is made to apply the same geochemical applications for each OFR, occasionally an improved geochemical application will dictate a change in how data is interpreted.

The types of KIMs and MMSIMs® and the geochemical parameters used to define them as useful indicators for diamond and base metal exploration are discussed in Morris et al. (2000) and Ontario Geological Survey (2001). However, a different approach to the interpretation of olivine geochemistry is applied in this report.

Kimberlite Indicator Minerals

Garnet

Garnet grains recovered and analyzed from samples collected in this study include Cr-pyrope, pyrope, eclogite, megacryst, almandine, andradite and spessartine. Garnets of peridotite origin are typically Cr-rich pyropes. This mineral may originate from many different types of peridotite, but the most important are harzburgite and lherzolite. Eighty-five percent of Cr-pyropes that occur as inclusions in diamond are Ca-depleted, Cr-enriched and harzburgitic in origin (Gurney 1984). These types of garnet have been termed "G10" (Dawson and Stephens 1975). The recovery of "G10" garnets from surficial material is important since it suggests that these minerals originated from harzburgitic peridotite and are more strongly associated with diamonds than are garnets of lherzolitic ("G9") origin (Dawson and Stephens 1975).

Other pyrope garnets associated with kimberlites are the megacrystic suite, which are not directly associated with diamond. These, when found with other KIMs, can also be useful indicators. These minerals range from Cr-poor to moderate levels (2 to 3 wt %) of Cr_2O_3.

The composition of mantle derived eclogitic garnet is complex and overlap may exist between garnets of peridotitic and deep crustal origin (Dawson and Stephens 1975). However, it is possible to differentiate eclogitic garnets from crustal and Cr-poor megacrystic garnets through analysis of the garnet's composition (Schulze 1999). Typically, eclogitic garnets have an FeO content of less than 22 wt %. The MnO wt %

values of eclogitic garnets are commonly less than 0.5 wt % whereas crustal garnets have values of over 1 wt %. Also, the wt % Na_2O for garnets derived from diamond-bearing eclogites is greater than 0.07 (Gurney 1984; McCandless and Gurney 1989; Schulze 1999). Like the "G10" Cr-pyrope garnet, eclogites with low FeO and MnO wt % values and high Na_20 wt % values are considered a valuable KIM.

Chromite

Chromites found in diamond inclusions differ from most other chromites by their high Cr_2O_3 content, generally greater than 61 wt % (Gurney 1984). In addition, they also have an MgO content greater than 10 wt % (Fipke, Gurney and Moore 1995). These chromites are termed "inclusion field" chromites since they plot in the diamond inclusion field on a chromite Cr_2O_3-MgO plot. Finding such a chromite in surficial material is just as significant as finding a "G10" Cr-pyrope garnet.

Chromite Cr_2O_3-TiO_2 plots are useful in differentiating chromite unique to lamproites and kimberlites from those that are non-lamproitic or non-kimberlitic in origin (Fipke, Gurney and Moore 1995). Those chromites that plotted in the non-lamproite/ kimberlite field were excluded from the KIM database. Those that plotted in the overlap field and the field unique to kimberlites and lamproites were included in the KIM database.

Mg-ilmenite

Ilmenite found within kimberlite is generally Mg-rich with MgO values that range between 4 and 15 wt % (McCallum and Vos 1993) and Cr_2O_3 values that range from 0.1 to 11.0 wt % (Mitchell 1986). In this study, ilmenites with these characteristics are regarded as useful KIM indicators.

A Mg-ilmenite parabolic plot (Cr_2O_3 vs. MgO; Gurney and Moore 1991) can be used to determine if the ilmenite grains originated from a reducing environment (favorable for diamond preservation within the magma) or from an oxidizing environment (conducive to diamond resorption into the magma). This diagram is based on the suggestion that the incorporation of Fe_2O_3 into the ilmenite structure is dependent upon oxygen fugacity (fO_2) in the kimberlite magma (Hagerty and Tompkins 1983). Therefore, ilmenite chemistry may be useful in predicting if magma conditions are favorable for diamond preservation (reducing conditions) or resorption of the diamond into the magma (oxidizing conditions) (Gurney and Zweistra 1995).

Cr-diopside

Stephens and Dawson (1977) attempted to classify Cr-diopsides as kimberlitic based on cluster analysis. Their analysis suggested that most Cr-diopsides derived from kimberlite consist of Cr_2O_3 wt % values greater than 1.45. These were referred to as high Cr-diopsides, and since then, Cr-diopside has been classified as kimberlitic based on this Cr_2O_3 wt % value (McClenaghan et al. 1993; McClenaghan et al. 1995; McClenaghan et al. 1996). However, clinopyroxenes isolated from kimberlite have a wide range of

chrome content. For example, Cr-diopsides isolated from kimberlite in the Kirkland Lake to Cobalt area of northeastern Ontario have Cr_2O_3 wt % values ranging between 0.03 and 3.0 % (Sage 1996). Recognizing this, others have applied 0.5 wt % Cr_2O_3 to include more Cr-diopside grains within kimberlite data sets (Thorleifson and Garrett 1993).

Recognizing a need to determine better criteria for defining Cr-diopside sources, the OGS undertook a study to characterize the composition of Cr-diopside from kimberlite and other bedrock types. By comparing the molecular wt % of Cr_2O_3, Al_2O_3 and Na_2O, the OGS established a template within which Cr-diopsides associated with kimberlite plot as a separate field (Morris, Sage and Ayer 1999; Morris et al. 2000; Morris et al. in prep.).

The application of this template to Cr-diopside data obtained from overburden samples is useful in differentiating Cr-diopside derived from a deep mantle source as opposed to a shallow crustal source, and is a far better discriminator of Cr-diopsides derived from kimberlite than from previous methods cited in the literature.

Olivine

Like Cr-diopsides, olivine on its own is not a good KIM. Previously (Morris et al. 2000) a binary plot comparing Mg/Mg+Fe vs. SiO_2 was developed and applied to olivine data. Although this approach was successful in screening out many olivines unrelated to kimberlite, there were many that plotted within an overlap field that included both mafic and kimberlite-derived olivine. As a result, an area around Killala Lake was highlighted as a potential kimberlite exploration area based largely on the presence of an anomalous number of olivine grains. Unfortunately, the olivines were most likely derived from a gabbroic ring associated with the Killala Lake alkalic complex located directly up-ice of the proposed kimberlite exploration area (Morris et al. 2000).

In an attempt to improve on this binary plot, a second binary plot, comparing olivine wt % CaO and forsterite content was developed (Ontario Geological Survey 2001). This plot is based upon examination of olivine data derived from Ontario kimberlites, where it was noted that olivines derived from kimberlite had a depleted CaO wt % when compared to other rock types (Crabtree, unpublished data, Ontario Geoscience Laboratories, 2001). This may be due to a combination of pressure (Finnerty 1986) and the effects of magmatic cooling rates. Because of this, olivine associated with kimberlite plots within a unique field on the wt % CaO vs. forsterite content binary plot. Although this approach is a significant improvement in using olivine as a KIM, it should be noted that olivines from layered mafic complexes can have compositions similar to those derived from kimberlite (Morse 1996).

Metamorphic or Magmatic Massive Sulphide Indicator Minerals

Averill (1999) defined a suite of minerals useful for identifying metamorphosed volcanosedimentary massive sulphide, skarn, greisen and magmatic Ni-Cu massive sulphide deposits. Identifying these minerals in overburden deposits is possible and useful as they are: 1) coarse-grained in the host rocks; 2) are unique to these types of

mineralization; 3) visually distinctive; 4) easy to concentrate due to their specific gravity (> 3.2); 5) amenable to paramagnetic separation; and 6) are relatively resistant to weathering (Averill 1999). From a practical viewpoint and due to time constraints, the composition of all these grains was not determined. Only compositions of heavy minerals representing some of the more important MMSIMs® (Cr-diopside, chromite, gahnite, olivine) were determined.

Cr-diopside

Only those Cr-diopsides plotting outside the kimberlite template (as defined in the previous section) were considered as potential MMSIMs®. These grains were further subdivided based on their Cr_2O_3 wt % values. Cr-diopside recovered from Ni-Cu massive sulphide deposits in the Thompson Nickel Belt (Manitoba) and Finland consistently have Cr_2O_3 wt % values less than 1.3 (S. Averill, personal communication, Overburden Drilling Management Limited, 1999). For this reason, Cr-diopsides with less than 1.3 wt % Cr_2O_3 were considered to be MMSIMs®. However, when using this criteria, caution must be exercised as several Cr-diopside grains derived from 2 lamprophyres sampled in the Killala Lake area have Cr_2O_3 wt % values of less than 1.3 (Morris et al. 2000). Those with a wt % Cr_2O_3 greater than 1.3 were excluded from the MMSIM® data base.

Chromite

Chromites that plot in the non-lamproitic/kimberlitic field and the overlap field of the Fipke, Gurney and Moore (1995) Cr_2O_3-TiO_2 plot were included in the MMSIM® database.

Olivine

Olivine that plotted outside the kimberlitic olivine field on the wt % CaO versus forsterite content binary plot and within a forsterite content between 40 and 95 were classified as an MMSIM®.

Gahnite

Gahnite is a useful indicator mineral in exploration for polymetallic deposits in high grade metamorphic terrane due to its hardness (8) and stability in metamorphic rocks (Parr 1992). Although rare, gahnite is reported in a number of polymetallic deposits (Chew 1977; Plimer 1977; Spry 1982; Williams 1983; Sheridan and Raymond 1984; Spry and Scott 1986; Spry 1987a, 1987b). Gahnite was also successfully evaluated as an indicator mineral in glacial dispersal plumes from the Montauban polymetallic deposit in Quebec (Lalonde et al. 1994). Gahnite is not only an indicator of polymetallic deposits within high grade metamorphic terranes but also of pegmatite (Cerny et al. 1981; Cerny and Hawthorne 1982).

Little work has been done using mineral composition to differentiate gahnite found within different source rocks (Batchelor and Kinnaird 1984; Dunlop 2000).

Gahnite analytical work completed by Morris (1996, 1997, 1998, 1999a, 2000) and Morris, Breaks et al. (1997) indicate that gahnite from polymetallic deposits commonly has MgO values greater than 2 wt % and gahnite from rare element pegmatite has MgO values commonly less than 2 wt %. Gahnite recovered from samples in this study were similarly classified.

Data Plotting Parameters

To identify areas or sites favorable for kimberlite, base metal, gold or carbonatite exploration, it is important to identify the location of important KIMs ("G10" Cr-pyrope garnet, "inclusion field" chromite), MMSIMs® (gahnite, low Cr-diopside), gold grains (pristine grains) and carbonatite indicator minerals (barite, perovskite, synchisite). The proportional dot diagrams presented in this report illustrate the relative abundance of heavy indicator minerals between sample sites and their distribution throughout the study area.

The proportional dot diagrams in this report are based, in part, on data recalculated to account for those samples with large numbers of estimated grains. For reasons of practicality, estimates rather than precise counts of the number of heavy mineral indicators in some concentrates were inferred by the external lab (Morris 2002, Appendix 5). For example, the heavy mineral concentrate of sample 67-Ma-00 contained an estimate of 15 ilmenite grains, however, only 4 ilmenite grains were picked. The composition of the 4 ilmenite grains was used to infer the number of kimberlitic and non-kimberlitic grains. An example of this type of calculation is presented in Stephenson, Morris and Crabtree (1999). Comparison of the number of grains picked versus the number of grains estimated within the heavy mineral concentrate per site are presented in Appendix 2 (this report) for KIMs and MMSIMs®.

Heavy mineral concentrates were further normalized to a table feed weight of 10 kg. However, as this did not generate any additional anomalous sites or trends, compared to the plotting of non-normalized data, the results are not included in this report.

Summary proportional dot diagrams for KIMs, gold and carbonatite are based on total numbers of each suite of indicator minerals. However, this was not possible for the MMSIMs® as some of the heavy minerals were reported as either actual grain counts (e.g., gahnite), as "trace" amounts (e.g., kyanite) or as a percentage of a particular grain size (e.g., orthopyroxene). To resolve this problem, when an MMSIM® was reported as a "trace", a value representing half the lowest recorded value was applied (0.25). Subsequently, those sites with a significant MMSIM® value were identified.

These sites were then ranked from 0 to 7 for modern alluvium samples and 0 to 3 for till samples based upon the number of significant, individual MMSIMs® determined for each site. For example, sample 310-Ma-00 has one of the higher numbers of significant MMSIMs® at 7 (barite, goethite, grossular garnet, low-Cr diopside, olivine, orthopyroxene and pyrite) and was therefore given a ranking of 7. Site 1152-TM-00 was given a ranking of 3 as it consisted of 3 different types of MMSIMs®, each with a

significant value (chalcopyrite, low-Cr diopside and pyrite). The ranked values were then ordered from highest to lowest value to produce an MMSIM® proportional dot diagram summarizing the distribution of those sites with the highest number of significant, individual MMSIMs®.

RESULTS

Orientation Surveys

Cameco Gold Inc., Empress Hill Gold Property

The original orientation survey over Cameco Gold Inc., Empress Hill Gold property involved 4 modern alluvium, 4 till and 1 sericite schist bedrock sample. Of these samples, significant numbers of gold grains were recovered from 1 modern alluvium, 1 till and the sericite schist bedrock sample (Table 1) (Morris et al. 2000).

To verify these gold grain values, 3 additional modern alluvium samples and 1 till sample were collected during the summer of 2000. Significant gold values were recovered from 2 of the modern alluvium samples (Table 1). Both samples were collected

Sample No.	U.T.M		Gold Grain Types and Totals			
	Easting	Northing	Total	Reshaped	Modified	Pristine
1999 Data						
466-Ma-99	501638	5411791	0	0	0	0
483-Ma-99	502491	5412367	391	1	1	389
490-Ma-99	500558	5411492	0	0	0	0
492-Ma-99	500665	5411589	2	2	0	0
471-Tm-99	501518	5411772	2	0	0	2
476-Tm-99	501633	5411918	4	3	0	1
481-Tm-99	502137	5412198	1	1	0	0
488-Tm-99	502545	5412302	1096	3	0	1093
Bedrock	502070	5412234	251	0	14	237
2000 Data						
449-Ma-00	502536	5412357	304	17	39	248
451-Ma-00	502559	5412330	204	9	19	176
457-Tm-00	502368	5412325	0	0	0	0
458-Ma-00	502410	5412397	0	0	0	0

Table 1. Gold grain data, Empress gold property. This table compares gold grain values recovered from modern alluvium, till and a sericite schist sample obtained from the Cameco Gold Inc., Empress Hill Gold Property in 1999 (Morris et al. 2000) and this report.

within 60 m of the modern alluvium and till samples that yielded significant gold values in 1999 (Table 1).

The irregular distribution of significant gold values from overburden samples collected over the property suggests that significant gold concentrations are hosted in boudinage structures and not distributed evenly throughout a significant area of bedrock (M. Koziol, Cameco Gold Inc., personal communication, 2000). A more detailed till sampling program over the proposed area of mineralization may better define gold distribution in the host rock.

Hays Lake Gravel Pit

No gold grains were recovered from the 3 coarse-grained glaciolacustrine samples collected from the Hays Lake gravel pit. This would suggest that there is no significant placer gold within the gravel pit, contrary to the Mill Producers Ltd. assay report.

However, given that the original aggregate samples were assayed, it is possible that assay results might reflect gold within clasts at this site. The proximity of any gold-bearing clasts to this site may be very local, as gold-bearing rock was mined from the cliff over-looking the site (M. Smyk, OGS- Resident Geologists Program, Thunder Bay South, personal communication, 2001). A second possibility is that gold within the matrix of the aggregate is too fine to detect through heavy mineral processing.

Regional Survey

Kimberlite Indicator Minerals, Schreiber Area

Garnet

Of the 58 garnets submitted to the OGL for microprobe analysis, 2 were determined to be "G10" Cr-pyrope garnets and 24 were identified as "G9" Cr-pyrope garnets (Figure 3). One grain was identified as a Type II eclogite (Figure 4) and 1 as a megacryst (Figure 4). Fourteen grains were classified as crustal, 9 as grossular, 4 as spessartine and one as undetermined. Microprobe data for these grains is summarized in Morris 2002 (Appendix 9). Summary statistics for the Cr-pyrope garnets are provided in Table 2. Sample 414-Ma-00 has a "G10" Cr-pyrope garnet and sample 1157-Ma-00 has both a "G10" garnet and a megacryst. Both sites are associated with a fault that controls the orientation of the northern part of the Aguasabon River.

A proportional dot distribution diagram of the "total" Cr-pyrope garnet data illustrates 3 areas and 10 individual sample sites where either "G10s" exist, or the number of "G9s", eclogites or megacrysts is deemed significant (Figure 5). The 3 areas include the; 1) Kamuck Lake/River area (samples 1076-Ma-00, 1094-Ma-00, 1101-Ma-00, 1131-Ma-00, 1299-Ma-00); 2) south end of Long Lake (samples 88-Tm-00, 103-Ma-00, 127-Ma-00, 426-Ma-00, 442-Ma-00); and 3) Aguasabon River (samples 414-Ma-

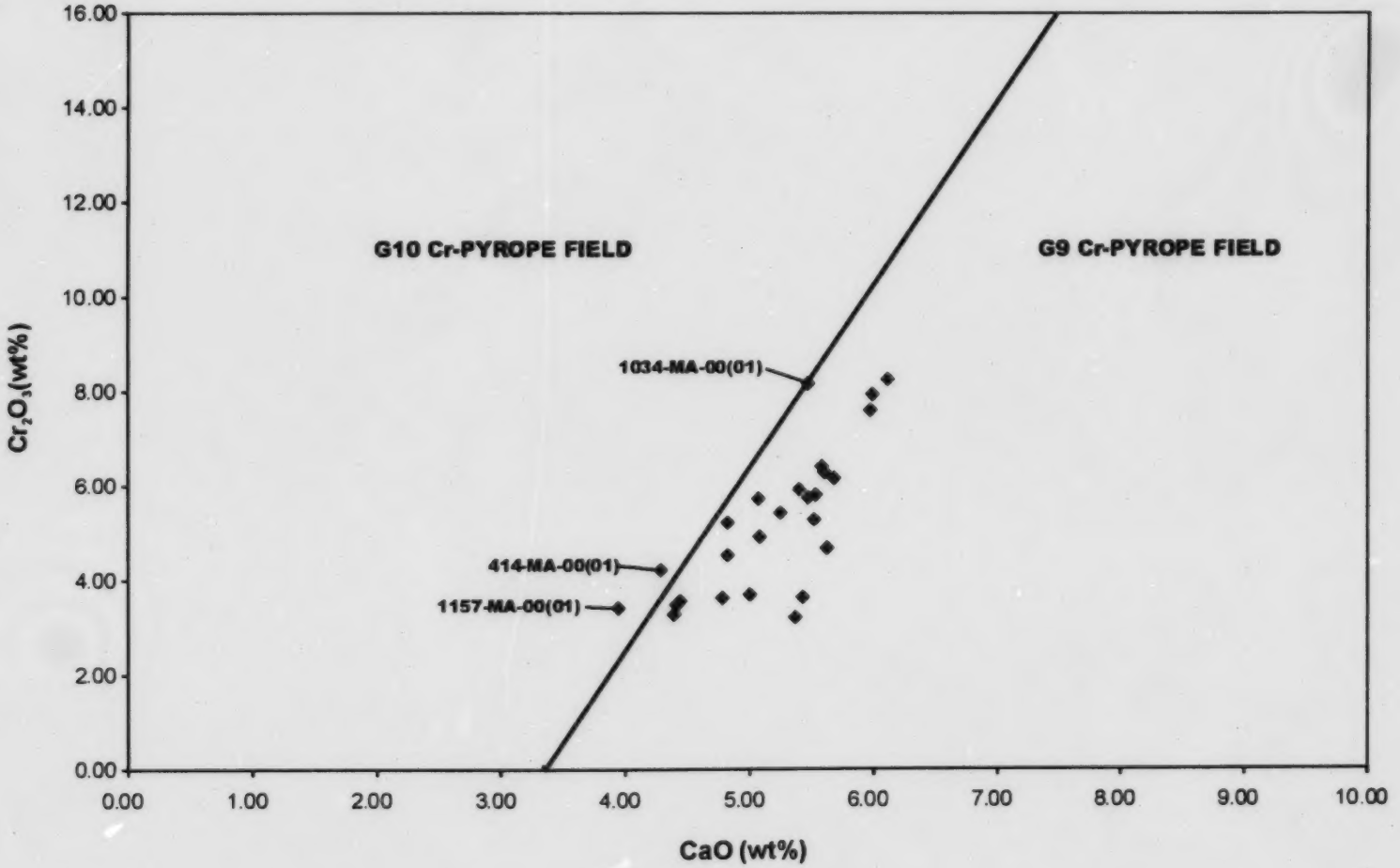


Figure 3. "G10" and "G9" Cr-pyrope garnet Cr_2O_3 - CaO plot (after Dawson and Stephens 1975). Selected sample numbers are shown. Number in brackets repesents the grain number for that sample.

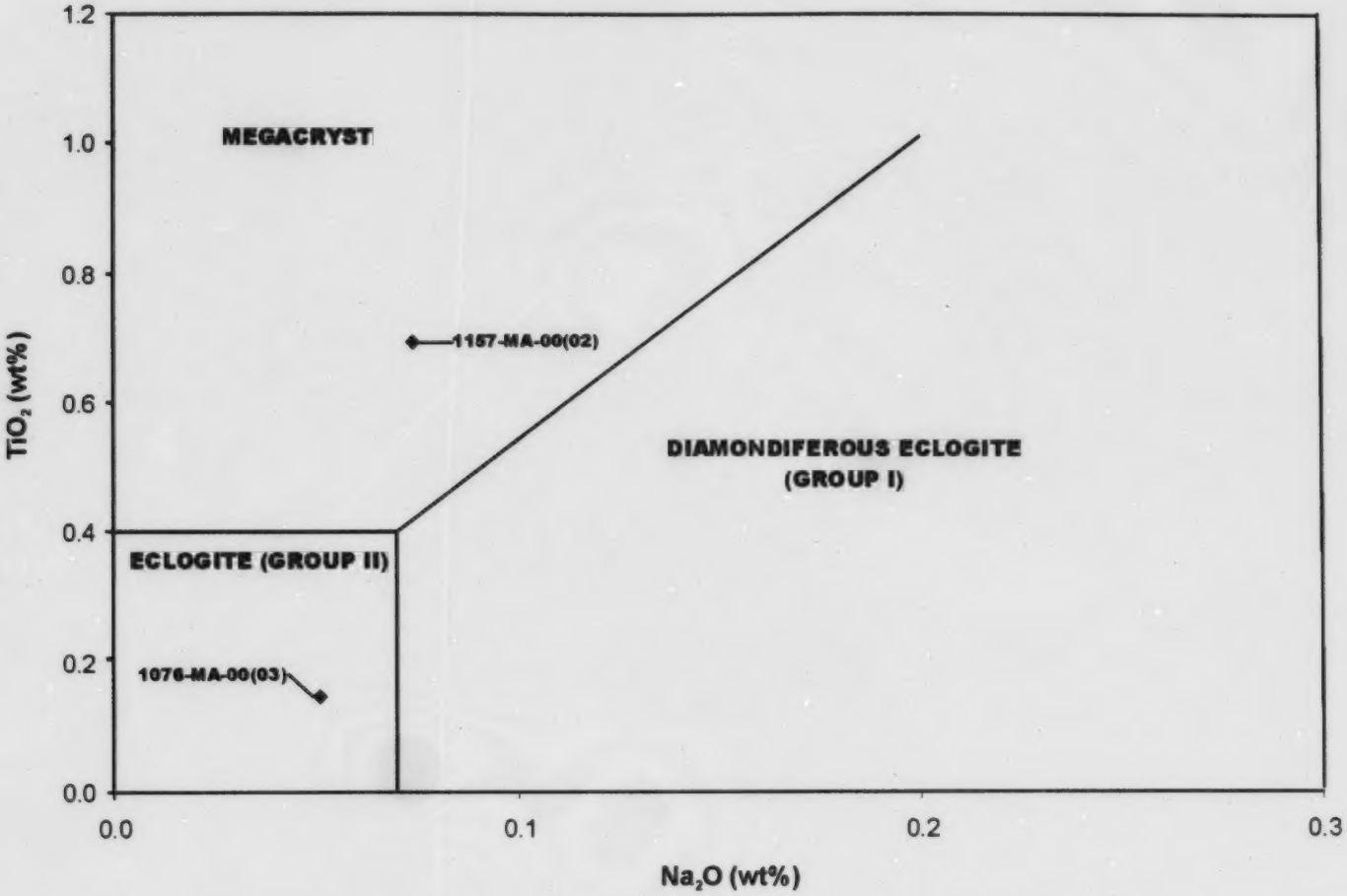


Figure 4. Eclogite-megacryst TiO_2-Na_2O plot (after Schultze 1999). The number in brackets represents the grain number for that sample.

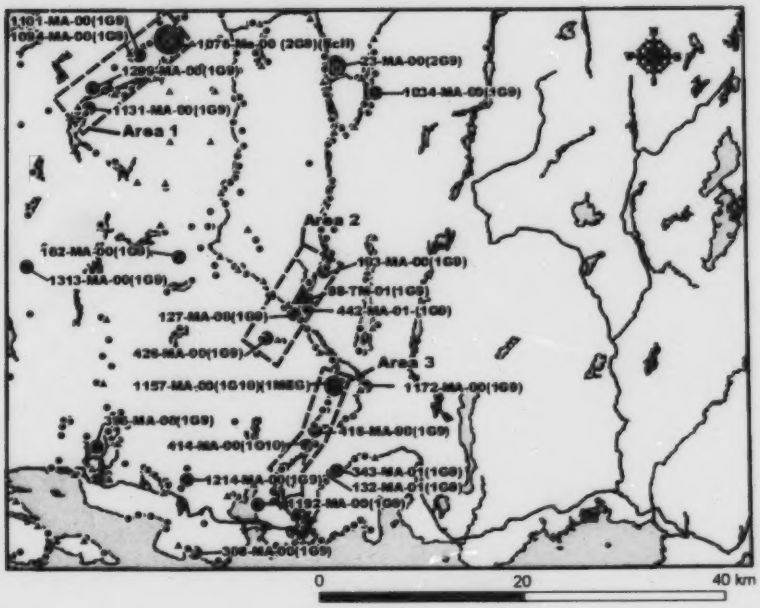


Figure 5. Regional distribution of "G10", "G9" eclogite (Group II) and megacryst garnets. The number and acronym beside the sample number represent the number and type of garnet recovered from that site.

00, 416-Ma-00, 1157-Ma-00, 1192-Ma-00). Several anomalous individual sample sites include: 23-Ma-00, 132-Ma-00, 162-Ma-00, 308-Ma-00, 1313-Ma-00, 343-Ma-00, 396-Ma-00, 1034-Ma-00, 1172-Ma-00, 1214-Ma-00. All 3 areas and several individual sites are associated with major faults.

Chromite

Ninety-three chromite grains were submitted to OCL for microprobe analysis (Morris 2002, Appendix 9). Of these grains, 4 plotted on the lower contact of the diamond inclusion field of the Fipke, Gurney and Moore (1995) MgO-Cr_2O_3 diagram (samples

Media	General Statistics		
	Number of Sample Sites With Grains	Total Grains	Maximum Per Sample Site
Modern Alluvium (values based on number of grains observed and picked from sample)			
G10s	2	2	1
G9s	20	23	2
Eclogite II	1	1	1
Megacryst	1	1	1
Inclusion Field Chromite	2	3	2
Cr-Diopside	23	67	7
Olivine	8	2	1
Modern Alluvium (values recalculated to estimated number of grains in sample concentrate)			
Chromite	22	76	20
Mg-Ilmenite	25	63	24
Total KIMs		238	26
Till (values based on the number of grains observed and picked from sample)			
G9	1	1	1
Inclusion Field Chromite	1	1	1
Chromite	8	19	8
Mg-Ilmenite	5	6	2
Cr-Diopside	3	11	6
Total KIMs		38	8

Table 2. Summary statistics for kimberlite indicator minerals. Values presented here are subdivided based on material from which the grains were recovered and on whether the values are re-calculated to account for estimated numbers of grains within a sample's heavy mineral concentrate. A summary of the number of grains observed and picked per site as well as those sites with an estimated number of grains are summarized in Appendix 2 (this report). Detailed discussion on how values were determined from sites with an estimated value is presented in the data plotting parameter section of this report.

361-Ma-00 [2 grains], 1200-Tm-00 and 1201-Ma-00; Figure 6). Two of these grains, both from sample 361-Ma-00, did not plot in the diamond inclusion field of the Fipke, Gurney and Moore (1995) TiO_2- Cr_2O_3 diagram (Figure 7). However, as both the TiO_2 and Cr_2O_3 values plot within an acceptable range on the MgO-Cr_2O_3 diagram, they are included as inclusion field chromites. The other 2 inclusion grains were recovered from a

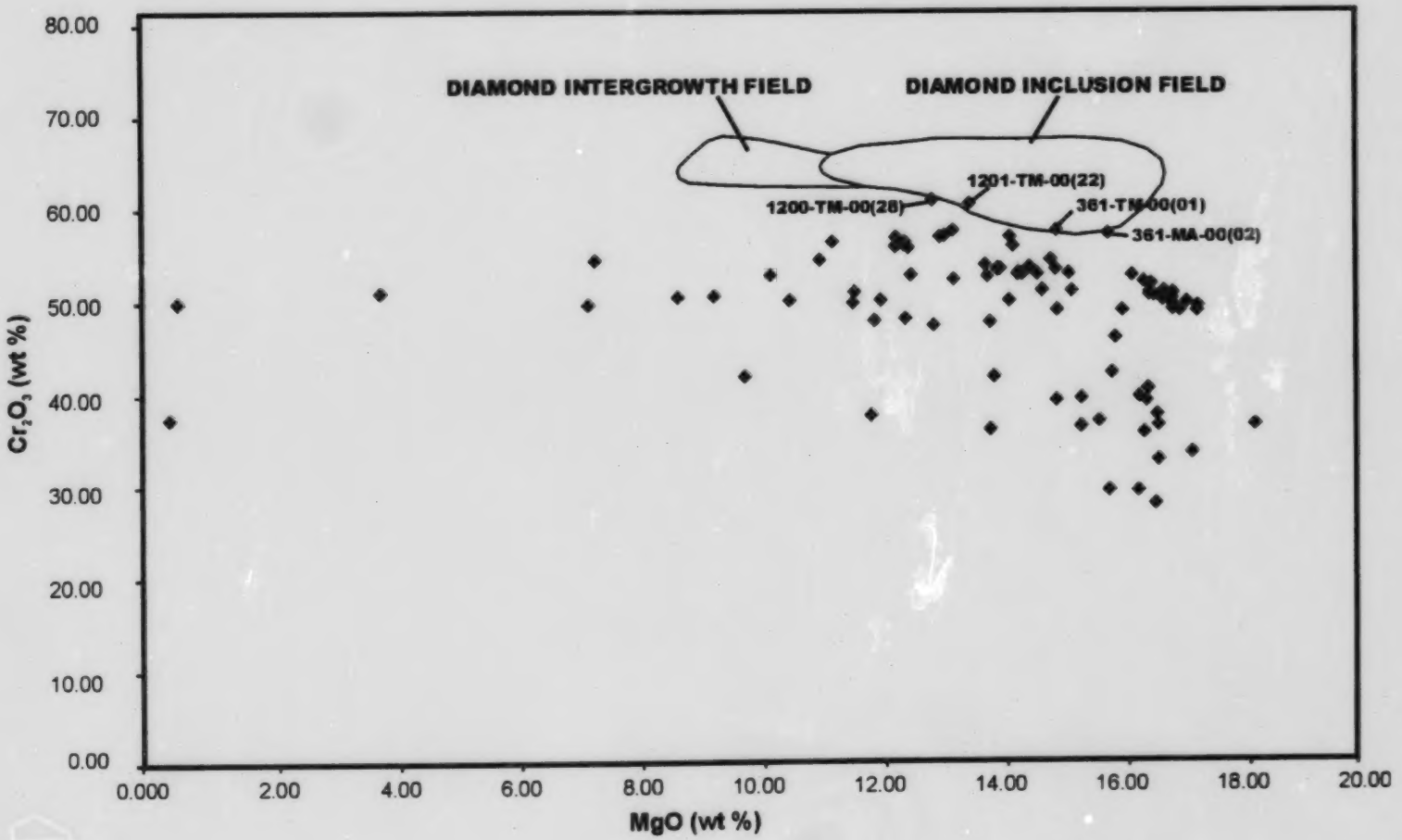


Figure 6. Chromite Cr_2O_3 - MgO plot (after Fipke, Gurney and Moore 1995). Four grains plot on the lower margin of the diamond inclusion field. The number in brackets represents the grain number for that sample.

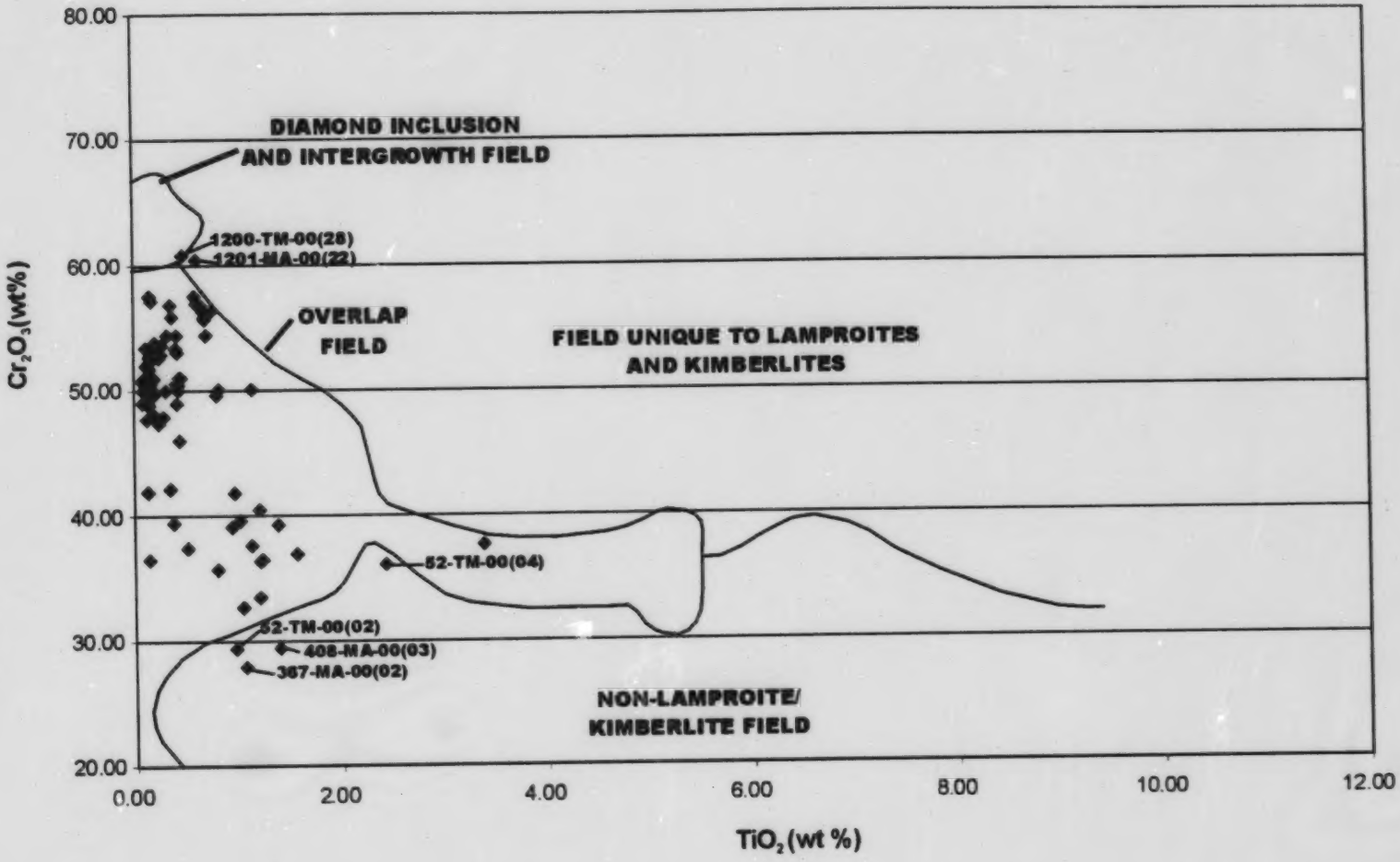


Figure 7. Cr_2O_3-TiO_2 plot (after Fipke, Gurney and Moore 1995).

modern alluvium and a till sample site located adjacent to each other. Eighty-five chromite grains plotted in the overlap field and 4 plotted in the non-kimberlite and/or lamproite field of the Fipke, Gurney and Moore (1995) TiO_2- Cr_2O_3 diagram (Figure 7). Summary statistics for the chromite data is summarized in Table 2.

Four areas and several individual sites stand-out as potential exploration targets for kimberlite based on the chromite data (Figure 8). These areas include the: 1) Kamuck Lake/River area (samples 1040-Ma-00, 1042-Ma-00, 1100-Tm-00, 1142-Ma-00, 1152-Tm-00); 2) south end of Long Lake (samples 67-Ma-00, 88-Tm-00, 103-Ma-00); 3) Aguasabon River (samples 1200-Tm-00, 1201-Ma-00); and 4) north end of Long Lake (samples 23-Ma-00, 25-Ma-00, 33-Tm-00, 52-Tm-00).

Mg-ilmenite

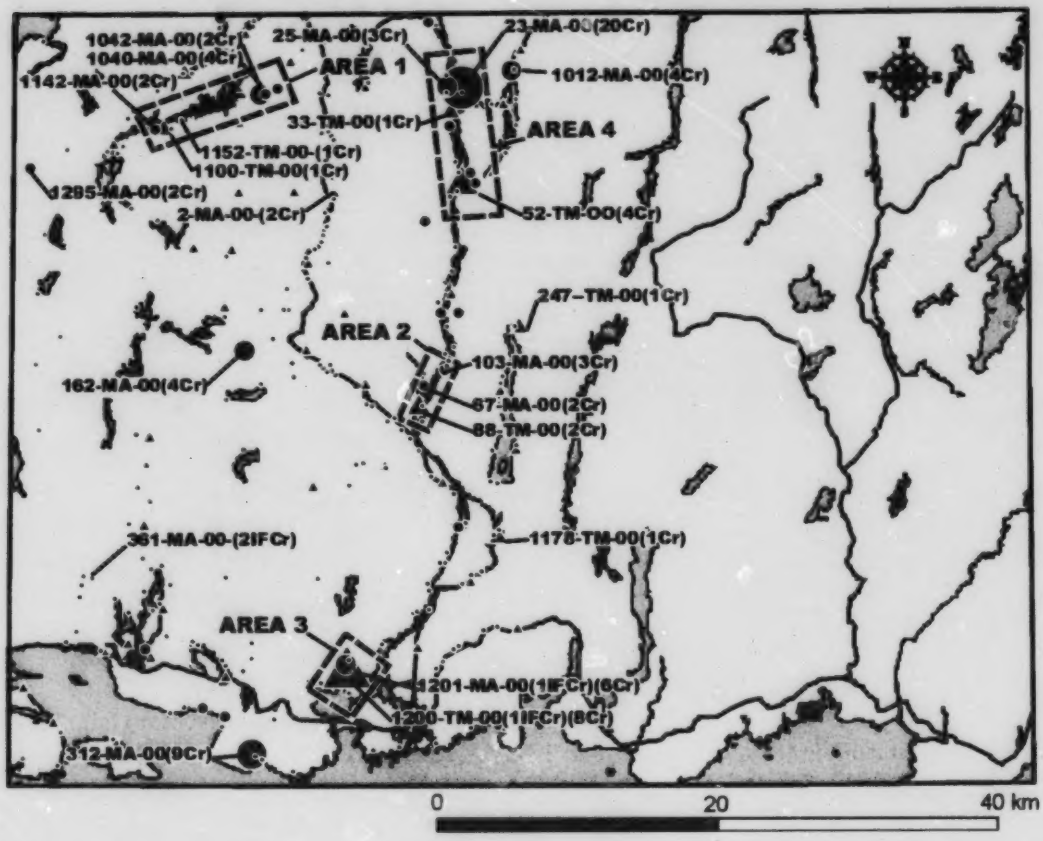
Of the 136 ilmenite grains submitted for microprobe analysis, 59 were classified as Mg-ilmenite (Morris 2002, Appendix 9). Summary statistics for the Mg-ilmenite data is summarized in Table 2. Microprobe data determined from those Mg-ilmenites submitted to the OGL were plotted on the Gurney and Moore (1991) Mg-ilmenite parabolic plot (Figure 9, Table 3). None of the values presented in Table 3 are based on recalculating values to account for estimated number of grains observed in a sample's heavy mineral concentrate. The reducing field indicates magma conditions favorable for diamond preservation while the oxidizing field indicates magma conditions conducive to diamond resorption. A number of grains from individual samples plotted in both the reducing and oxidizing fields (Table 3). This suggests that Mg-ilmenites were derived from either several different kimberlites or from different phases within a single pipe.

There are 5 areas that have 2 or more samples where the number of Mg-ilmenite grains are deemed significant (Figure 10). These include the: 1) the Kamuck Lake/River area (1040-Ma-00, 1044-Ma-00, 1074-Ma-00, 1076-Ma-00, 1094-Ma-00, 1111-Ma-00, 1133-Ma-00, 1141-Tm-00, 1295-Ma-00); 2) south end of Long Lake (88-Tm-00, 61-Ma-00, 67-Ma-00, 103-Ma-00); 3) north end of Long Lake (21-Ma-00, 42-Ma-00, 55-Ma-00, 57-Ma-00); 4) Aguasabon River (345-Ma-00, 416-Ma-00); and 5) Catlonite Lake (1012-Ma-00, 1036-Ma-00). There are also several additional sites scattered throughout the area (Figure 10) with anomalous numbers of Mg-ilmenites grains.

Cr-Diopsides

Of the 541 grains identified by the OGL microprobe as Cr-diopsides, 77 are of kimberlitic affinity (Figure 11) (Morris 2002, Appendix 9), 198 are classified as low-Cr diopsides and 247 are classified as high-Cr-diopsides. Summary statistics for KIM-related Cr-diopsides are presented in Table 2.

There are 4 areas that have 2 or more samples where the number of Cr-diopside grains with kimberlitic affinity are deemed significant (Figure 12). These include the: 1) Kamuck Lake/River area (1133-Ma-00, 1295-Ma-00); 2) north end of Long Lake (38-Ma-00, 73-Tm-00, 83-Tm-00); 3) Aguasabon River (416-Ma-00, 1159-Ma-00); and 4)



Till

# of grains	
0	▲
1	▲
2	▲
3-4	▲
5-8	▲

Modern Alluvium

# of grains	
0	·
1-2	•
3-6	●
7-9	●
10-20	●

Areas With Samples Containing Anomalous Values of KIM-related Chromites

1 Kamuck Lake/River Area

2 South End, Long Lake

3 Aguasabon River

4 North End, Long Lake

Cr = Chromite
If = Inclusion field chromite

Figure 8. Regional distribution of chromite grains. The number in brackets represent the number of chromite grains recovered from that site. Note that 2 sample sites consist of numbers that are recalculated estimates (23-Ma-00, 1040- Ma-00). For discussion on how values were recalculated to account for estimated number of grains, see data plotting parameter section, this report.

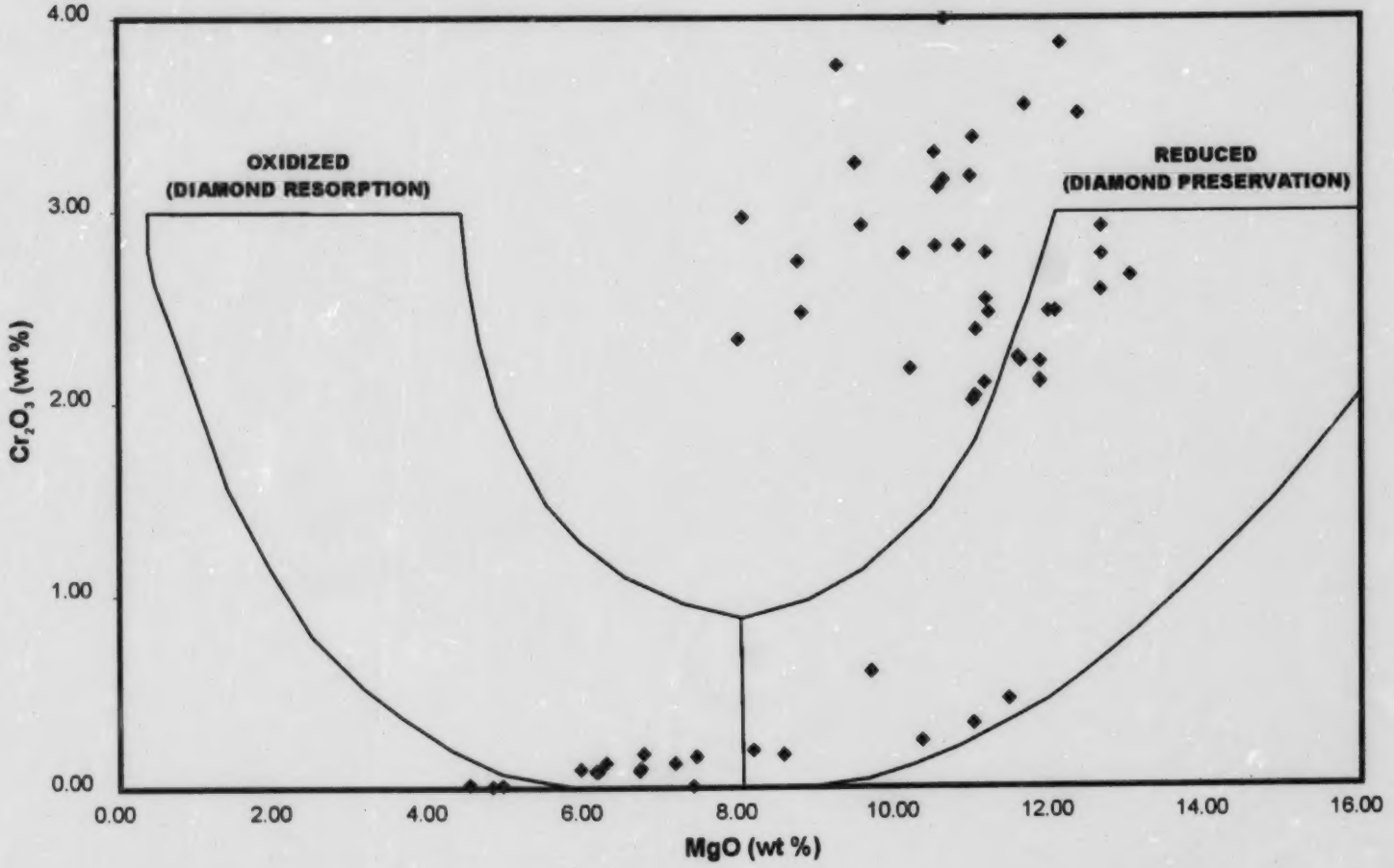


Figure 9. Mg-ilmenite Cr_2O_3 - MgO plot (after Gurney and Moore 1991). The values presented here are from microprobe data derived from Mg-ilmenites submitted to the Ontario Geoscience Laboratory.

Sample Number	Number of Grains per Sample			
	Reduced	Oxidized	Outside	Total
21-MA-00	0	0	1	1
42-MA-00	1	0	1	2
55-MA-00	0	0	2	2
57-MA-00	1	0	1	2
61-MA-00	0	0	1	1
67-MA-00	4	7	3	14
88-TM-00	2	0	0	2
103-MA-00	1	0	0	1
111-MA-00	0	0	1	1
160-MA-00	0	0	3	3
162-MA-00	1	0	0	1
215-MA-00	0	0	1	1
254-TM-00	1	0	0	1
310-MA-00	0	0	1	1
345-MA-00	0	1	2	3
416-MA-00	0	0	1	1
1012-MA-00	0	0	3	3
1036-MA-00	0	0	1	1
1040-MA-00	0	0	2	2
1044-MA-00	1	0	1	2
1074-MA-00	1	0	0	1
1076-MA-00	0	0	1	1
1094-MA-00	0	0	1	1
1111-MA-00	0	0	1	1
1119-TM-00	0	0	1	1
1133-MA-00	0	0	1	1
1141-TM-00	1	0	0	1
1178-TM-00	0	1	0	1
1295-MA-00	3	0	2	5
1311-MA-00	0	0	1	1

Table 3. Summary of reduced vs. oxidized environment for Mg-ilmenite grains. A reduced environment is favorable for diamond preservation. The values presented in this table are based on Mg-ilmenite grains picked and submitted to the OGL for microprobe analysis.

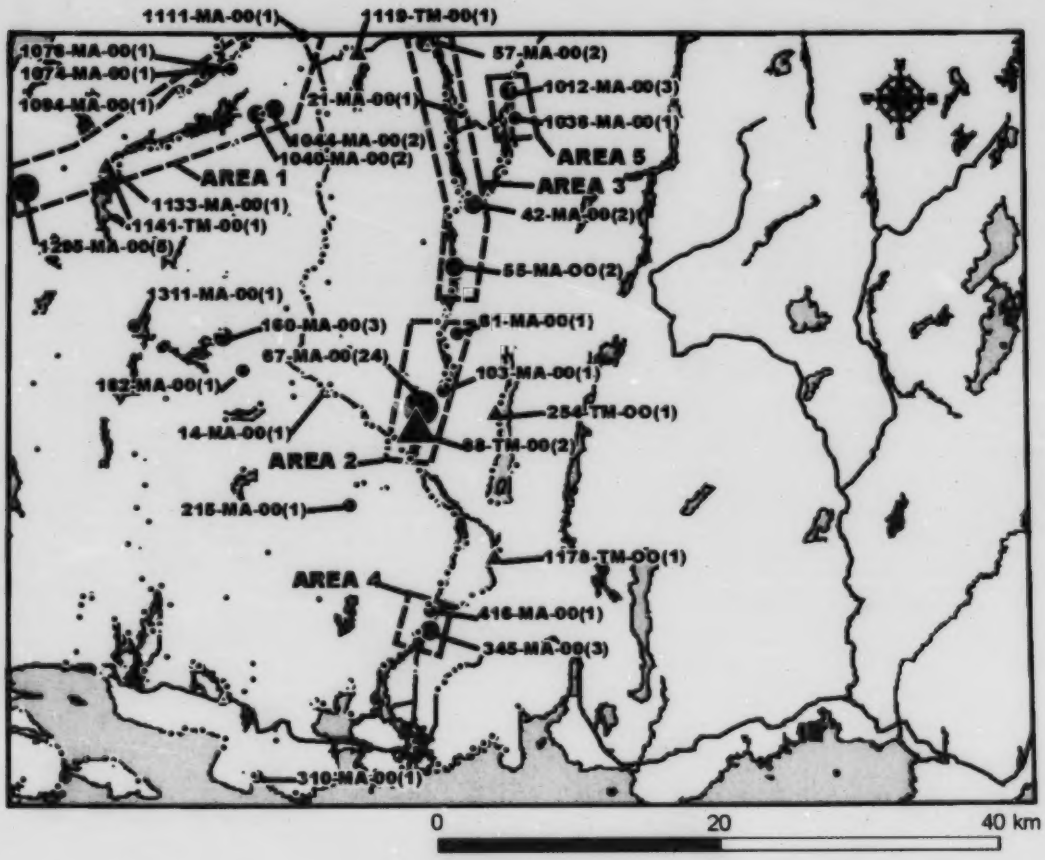


Figure 10. Regional distribution of Mg-ilmenite grains. The number in brackets represents the number of Mg-ilmenite grains recovered from that site. Note that the bracketed number for sample 67-MA-00 is based on recalculating the number of grains, picked and submitted to the Ontario Geosciences Laboratory, to provide for an estimated number of grains within the sample's heavy mineral concentrate. For discussion on how this was done, see data plotting parameters, this report.

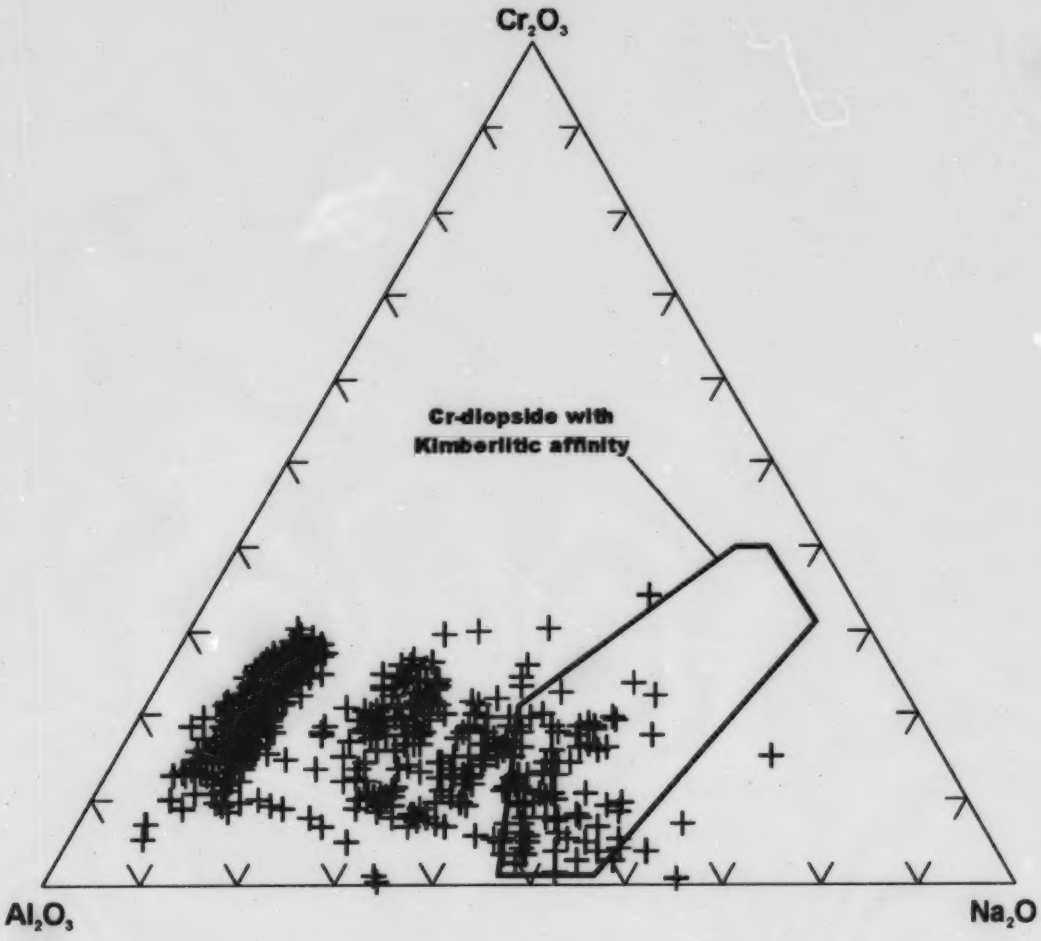


Figure 11. Ternary plot of Cr-diopside data. Grains were recovered from glaciolacustrine, modern alluvium and till samples. The template defines those grains that have a kimberlitic affinity. See text for discussion.

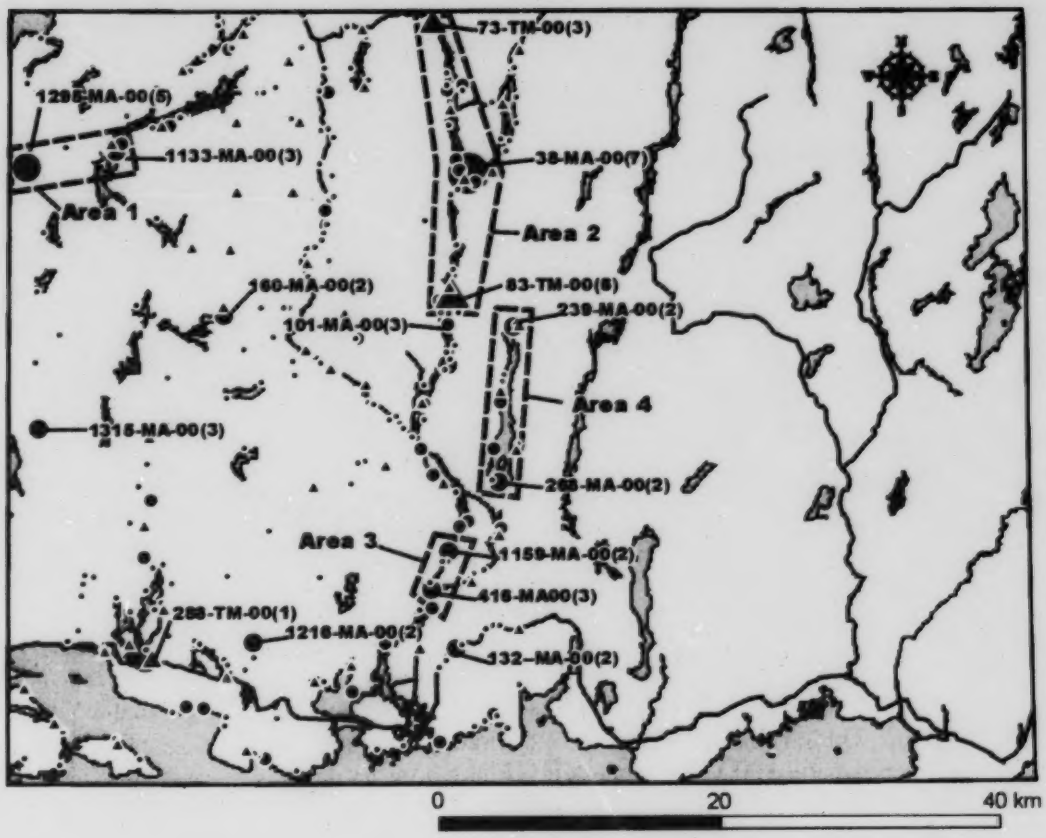


Figure 12. Regional distribution of Cr-diopside grains of kimberlitic affinity. The number in brackets represents the number of Cr-diopside grains recovered from that site.

Owl Lake area (239-Ma-00, 268-Ma-00). Several individual sites with anomalous KIM-related Cr-diopside values are also present.

Olivine

Only 2 of the 39 grains identified as olivines by the OGL microprobe, both from modern alluvium samples, are likely kimberlitic (Figure 13) (Morris 2002, Appendix 9). Each grain was recovered from a separate sample site (386-Ma-00, 1194-Ma-00; Figure 14). Summary statistics for the olivines are presented in Table 2.

Proposed Kimberlite Exploration Targets, Schreiber Area

Several sites and related areas were identified as favorable for kimberlite exploration by examining the distribution and composition of individual KIMs. As important as these sites are, fewer sites of higher quality can be recommended if only the total number of KIMs at each site is considered. This may be more desirable in that the recommended exploration areas are based on sample sites containing significant KIMs (e.g., a "G10") or a variety of KIMs (e.g., a "G10", Mg-ilmenite and chromite).

Four areas and 5 individual sites are proposed for kimberlite exploration (Figure 15, Table 4). Some values used to determine whether or not a sample site consisted of a significant number of KIMs, were re-calculated to account for an estimated number of grains within the heavy mineral concentrate. These samples have been highlighted within the discussion of the individual KIMs and within Table 4.

As discussed in Morris et al. (2000), determining proximity of a KIM signature to source is difficult in the present study area. Commonly, comparing the sample's pebble lithology to the local bedrock type can indicate proximity to source. However, the use of pebble lithologies in this area is not useful as: 1) many bedrock units are composed of several different bedrock lithologies; and 2) certain bedrock fragments, such as those derived from the Quetico metasediments, break down readily in surface materials. In the latter case, this skews the pebble lithology determinations to the few foreign clasts preserved within the surface materials.

Therefore, when evaluating proximity of an anomalous KIM heavy mineral signature to source, the following should be considered: 1) the number of sites in close proximity to one another that have anomalous KIMs; 2) the presence of more than 1 KIM type within a sample; 3) whether or not fluvial channels cut to bedrock or if they are perched on the surface of overburden materials; 4) location of sites with anomalous heavy mineral signatures to major tectonic structures; 5) presence of circular to elliptical magnetic signatures within the immediate vicinity; 6) presence of weathering rinds on the surface of indicator minerals; 7) presence of "soft" minerals that break down readily in the surface environment (such as olivine, Cr-diopside, perovskite); 8) the geochemistry of the indicator minerals themselves; 9) wear on the grain surface; and 10) other collaborating data such as lake sediment or till geochemistry.

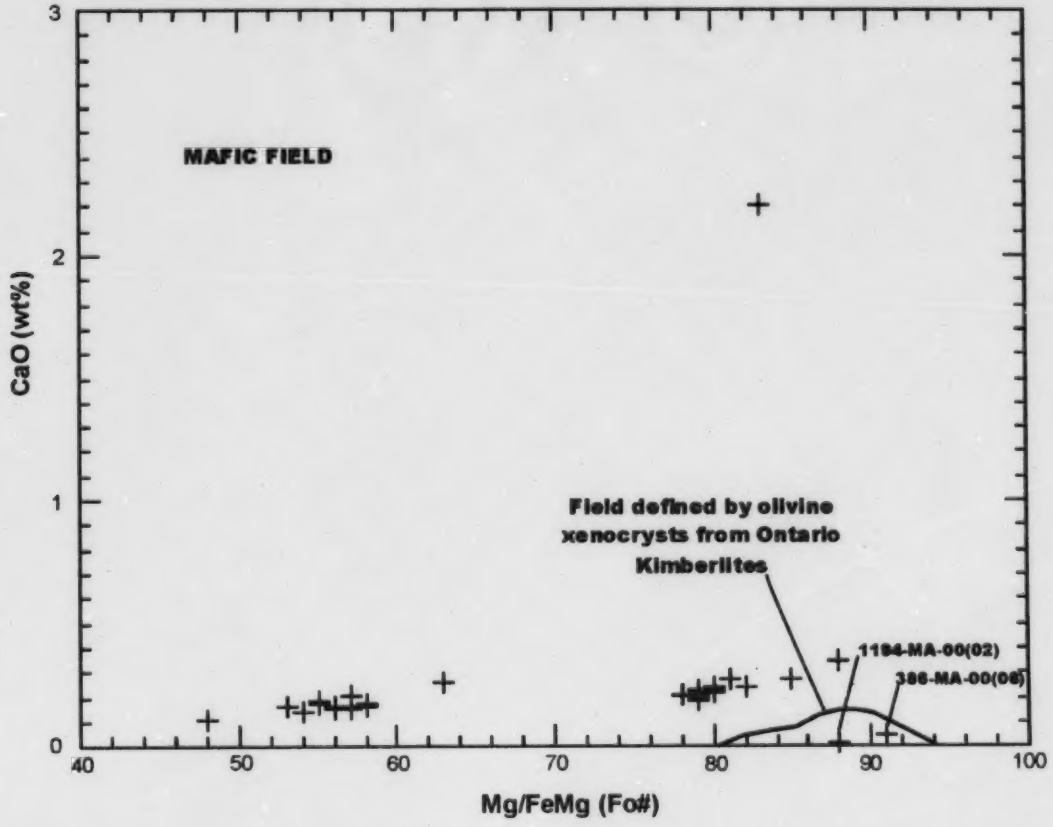


Figure 13. Binary plot of olivine data. This data was derived from modern alluvium samples (after Ontario Geological Survey 2001). Note that only 2 grains are likely from a kimberlitic source. See text for discussion. The number in brackets represents the grain number for that site.

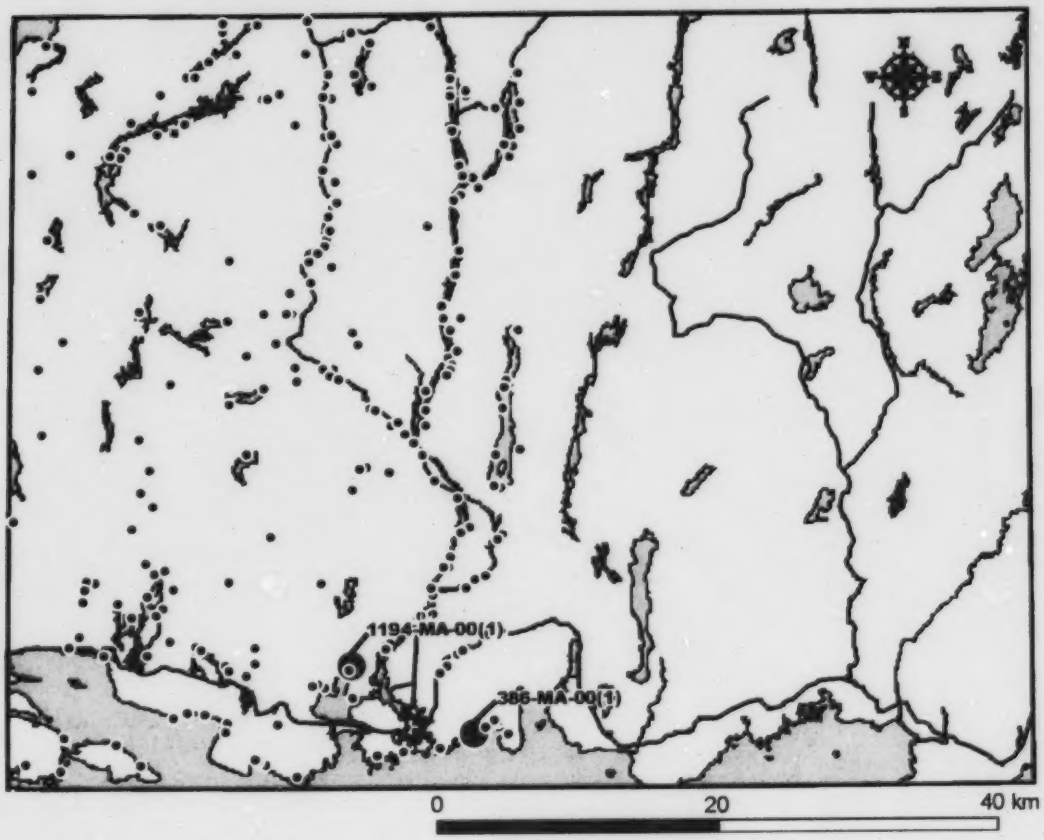


Figure 14. Regional distribution of olivine grains with kimberlitic affinity (see text for discussion). The number in brackets represents the estimated number of olivines from that site.

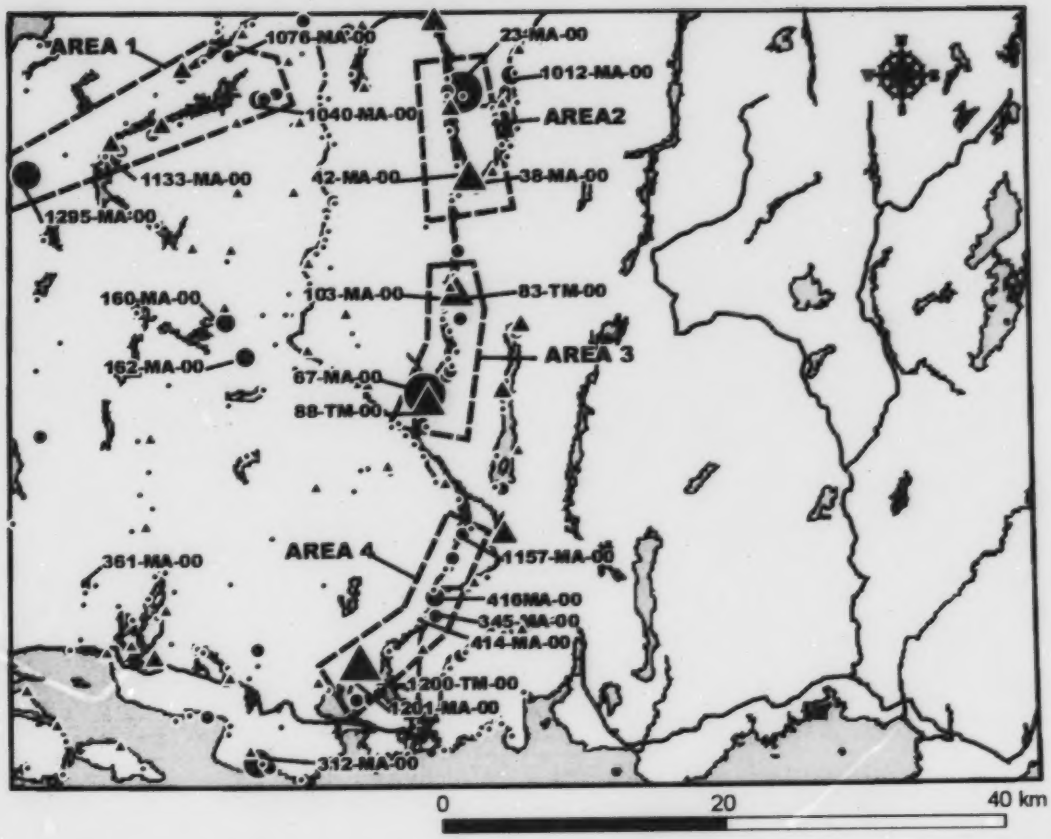


Figure 15. Regional distribution of total KIMs, Schreiber area. Numbered areas are summarized in Table 4 along with significant individual sites.

Area	Samples	Justification
1) Kamuck Lake/ River	1040-MA-00	**4 Cr, 2 IM**
	1076-MA-00	**2 "G9s", 1EcII, 1IM**
	1133-MA-00	**1 IM, 3DC**
	1295-MA-00	**2 Cr, 5IM, 5 DC**
2) Long Lake North	23-MA-00	**2 "G9s", 20 Cr***, 1 DC
	38-MA-00	1 Cr, **7 DC**
	42-MA-00	1 Cr, **2 IM**
3) Long Lake South	67-MA-00	**2 Cr, 24 IM***
	83-TM-00	**6 DC**
	88-TM-00	**1 "G9", 2 Cr, 2 IM**
	103-MA-00	**1 "G9", 2 Cr, 1 IM**
4) Aguasabon River	345-MA-00	**3 IM**, 1 DC
	414-MA-00	**1 "G10"**
	416-MA-00	**1 "G9", 1 IM, 3 DC**
	1157-MA-00	**1 "G10", 1 MEG**, 1 Cr, 1 DC
	1200-TM-00	**1 If-Cr, 8 Cr**
	1201-MA-00	**1 If-Cr, 6 Cr**
Individual Sites	160-MA-00	**3 IM, 2 DC**
	162-MA-00	**1 "G9", 4 Cr, 1 IM**
	312-MA-00	**9 Cr**
	361-MA-00	**2 If-Cr**
	1012-MA-00	**4 Cr, 3 IM**

G10/G9; Cr-pyrope garnets
EcII; Eclogitic garnet
MEG; Megacrystic garnet
Cr; Chromite
If-Cr; Inclusion field chromite
DC; Cr-diopside
IM; Mg-ilmenite

Table 4. Recommended areas for kimberlite exploration, Schreiber area. Those values with an (*) are based on re-calculating the number of grains, picked and submitted to the OGL for microprobe analysis, to an estimated number of grains within that sample's heavy mineral concentrate. A summary of the number of grains picked per site vs. those sites with an estimated number of grains is summarized in Appendix 2 (this report). Detailed discussion on how values were determined from sites with an estimated value is presented in the data plotting parameter section of this report. Highlighted values are regarded as significant.

For example, the areas recommended for kimberlite exploration in the Schreiber area are: 1) all associated with major faults (Area 1, the Kamuck Lake/ River area, is associated with the Gravel River fault and areas 2, 3, and 4 are all associated with a major fault controlling the orientation of Long Lake and the Aguasabon River); 2) the associated streams all cut to bedrock; 3) there is more than 1 sample site with an anomalous KIM signature associated with the anomalous area; 4) most sites have more than 1 KIM; 5) presence of Cr-diopside or olivine within some of the samples; and 6) presence of magnetic, circular anomalies (Ontario Geological Survey 2000a).

With regard to KIM geochemistry and numbers of KIMs recovered from specific sites, it is important to note that the anomalous sample sites 1200-TM-00 and 1201-Ma-00 consist of just chromite. The two "inclusion field" chromite grains recovered from each site are both marginal in the sense that they both plot on the lower margin of the diamond inclusion field on the Cr_2O_3 vs. MgO diagram of Fipke, Gurney and Moore (1995; *see* Figure 6). The heavy mineral signature from these sites may be more conducive to PGE mineralization than kimberlite (*see* MMSIM® section of this report).

Proposed Kimberlite Exploration Targets, Schreiber-Killala Lake Area

The Schreiber overburden mapping and sampling program completed in the summer of 2000 is an extension of work completed in the Killala Lake area during 1999. Generally, comparison of heavy mineral data is possible as the same sampling methods, laboratory sampling techniques and interpretation of KIM geochemistry are used. The only significant change in procedure between the 2 projects is in the way the olivine data has been interpreted. The new olivine CaO- Mg/FeMg binary plot (Ontario Geological Survey 2001) is a more effective method at isolating olivine grains derived from kimberlite. Prior to this, a SiO-Mg/FeMg olivine binary plot was used (Morris et al. 2000). Although this binary plot excluded many olivine grains from the kimberlite data set, many were included because of the plot's mafic-kimberlite overlap field. As such, kimberlite exploration targets were proposed for the Killala Lake area based primarily on large numbers of olivine grains that plotted in this mafic-kimberlite field (Morris et al. 2000).

When the new olivine binary plot is applied to the Killala Lake olivine data, only 10 olivine grains are classified as having a kimberlitic affinity (Figure 16). This greatly alters the proposed kimberlite exploration targets previously proposed for the Killala Lake area (Figure 17, Table 5). The most significant change occurs in the area around Killala Lake. There, high numbers of olivine grains from several sample sites suggested that this was an excellent area to explore for kimberlite. However, Morris et al. (2000) noted that the likely source for the olivines was from gabbros associated with the Killala Lake alkalic complex. This appears to be the case as all of the olivines plot outside the field defined by olivine xenocrysts from Ontario kimberlites on the CaO-Mg/FeMg binary plot (Figure 16).

By adjusting the olivine data from the Killala Lake study, it is now possible to combine the data sets from the Schreiber and Killala Lake areas. This provides a regional

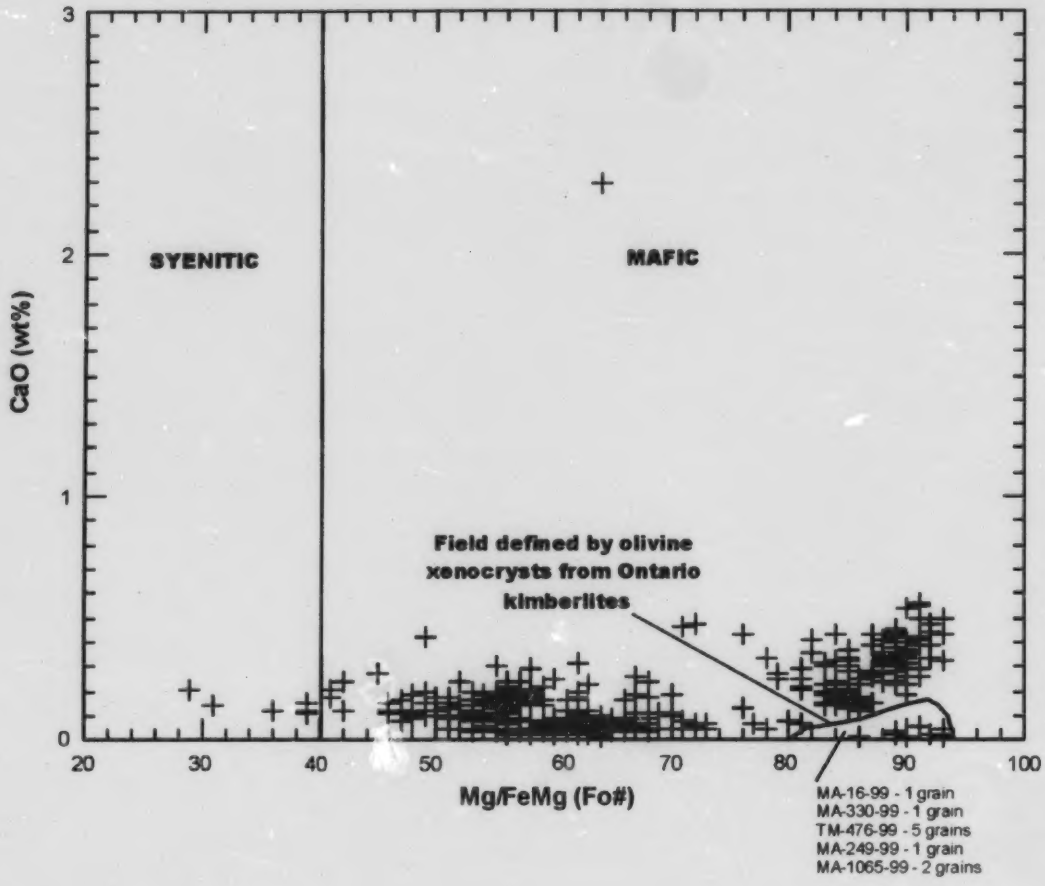


Figure 16. Binary plot of olivine data, Killala Lake area. This plot (after Ontario Geological Survey 2001) is derived from modern alluvium samples collected in the Killala Lake area, northwestern Ontario (Morris et al. 2000). This new approach of screening olivine data limits the kimberlitic olivine data base to just 10 grains.The previous binary plot included 217 "kimberlitic" olivines. This adjustment in defining kimerlitic olivines has a significant impact on recommendations for kimberlite exploration.

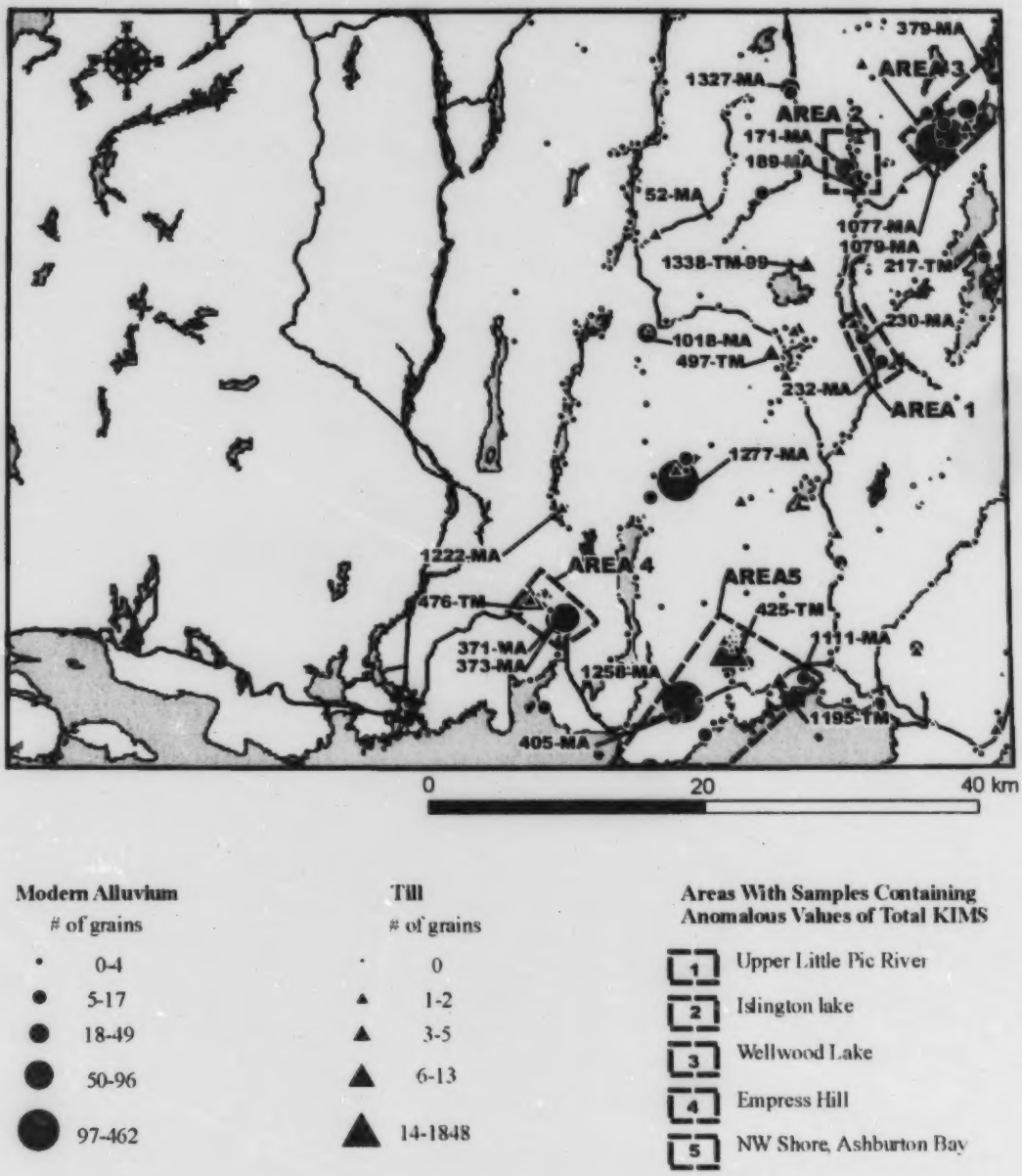


Figure 17. Distribuiton of total KIMs for the Killala Lake area. Numbered areas are summarized in Table 5. Re-evaluation of olivine data has altered proposed kimberlite exploration targets (Morris et. al. 2000). See text for discussion.

Area	Sample	Justification
1) Upper Little Pic River	230-Ma-99	**1 G10, 1 EcI**, 1 IM, 2 Cr
	232-Ma-99	**1 G10, 5 G9**, 1 DC
2) Islington Lake	171-Ma-99	**2 G9, 24 Cr*, 8 IM**
	189-Ma-99	**2 G10, 4 G9, 1 EC II, 3 MEG, 14 Cr***, 2 IM
3) Wellwood Lake	379-Ma-99	**1 MEG, 40 IM***
	1077-Ma-99	**2 G9, 3 MEG, 71 IM***, 4 Cr
	1079-Ma-99	**1 MEG, 459 IM***, 2 Cr
4) Empress Hill	371-Ma-99	**1 DC, 95 Cr***
	373-Ma-99	**75 Cr***
	476-Tm-99	**8 Cr***
5) NW Shore Ashburton Bay	405-Ma-99	**2 DC, 36 Cr***
	452-Tm-99	1 IM, **1847 Cr***
	1111-Ma-99	**10 IM, 1 KimEx, 6 Cr**
	1195-Tm-99	**3 Cr**
	1258-Ma-99	**2 DC, 350 Cr***
Individual Sites	52-Ma-99	**1 If-Cr**, 1 Cr
	497-Tm-99	**2 DC, 1 Cr**
	1018-Ma-99	**1 MEG, 2 IM, 46 Cr***
	1222-Ma-99	**1 G10**
	1277-Ma-99	**2 MEG, 273 IM***, 2 Cr
	1327-Ma-99	**1 G9**, 1 DC, **11 IM, 14 Cr**

G10/G9; Cr-pyrope garnet
EcI/EcII; Eclogitic garnet
MEG; Megacryst
Cr; Chromite
If-Cr; Inclusion field chromite
KimEx; Kimberlite chromite
DC; Cr-diopside
IM; Mg-ilmenite

Table 5. Revised, recommended areas for kimberlite exploration, Killala Lake area. These areas and sites are based on the re-evaluation of olivine data (*see* text for discussion). Those values with an (*) are based on re-calculating the number of grains, picked and submitted to the OGL for microprobe analysis, to an estimated number of grains within a heavy mineral's concentrate. A summary of the number of grains observed and picked per site as well as those sites with an estimated number of grains are summarized in Appendix 2 (this report). Detailed discussion on how values were determined from sites with estimated values is presented in the data plotting parameter section of Morris et al. (2000).

synopsis of the types, distribution and concentrations of KIMs. Nine areas and 13 individual sites are proposed for kimberlite exploration (Figure 18, Table 6). Note that some of the values used to determine anomalous sites were recalculated to account for an estimated number of grains within the heavy mineral concentrate of some samples. These samples have been highlighted within Table 6.

Note also that a number of areas and sites recommended for kimberlite exploration in the Schreiber area disappear when the Schreiber and Killala Lake data are combined. This is due to the larger numbers of KIMs associated with the Killala Lake data set. The greater number of KIMs recovered in the Killala Lake area may be due to the closer proximity of sample sites to the TSTZ.

Metamorphic or Magmatic Massive Sulphide Indicator Minerals

The number and types of MMSIMs® picked and observed from the samples is summarized in Morris 2002 (Appendices 7, 8). Oxide data for olivine, low-Cr diopside, chromite, gahnite and rutile grains are summarized in Morris 2002 (Appendix 9). Summary statistics for each MMSIM® are summarized in Table 7. Some MMSIM® values were re-calculated to account for the estimated number of grains within a sample's heavy mineral concentrate. Picked vs. re-calculated MMSIM® values are summarized in Appendix 2, this report.

Oxide data for most of the gahnite grains indicate a Geco or Mattabi type source (Morris 2002, Appendix 9; Figure 19). Oxide data from one gahnite grain (Ma-195-00, 0.34 MgO wt %) suggests that it was derived from rare-element pegmatite (Morris, Breaks et al. 1997). The distribution and relative number of gahnite grains per sample site is summarized in Figure 20.

Proposed Base Metal Exploration Targets, Schreiber Area

Presenting a proportional dot diagram for each MMSIM® is not practical due to the large number of individual MMSIMs®. Instead, a summary MMSIM® proportional dot diagram is presented (Figure 21). As discussed in the Data Plotting Parameters section of this report, this summary MMSIM® diagram is not based on total numbers of MMSIM® grains. Instead, the sites were ranked from 0 to 7 depending upon the number of sites with individual MMSIM® values that were deemed significant. In addition to the ranking of each sample site, sites that consisted of important MMSIMs®, such as 185-Ma-00 (75 gahnite) and 1201-Ma-00 (442 low-Cr diopsides and zinc-bearing chromite grains; *see* Morris 2002, Appendix 10), are also reported as significant base metal exploration targets.

Within the study area 7 areas and 4 individual sites represent potential base metal targets (Figure 21, Table 8). There are anomalous base metal geochemical signatures derived from lake sediment (Dyer 1997; Ontario Geological Survey 2000b) and humus and till "B" and "C" horizon (Morris 2001a) samples associated with several of the areas

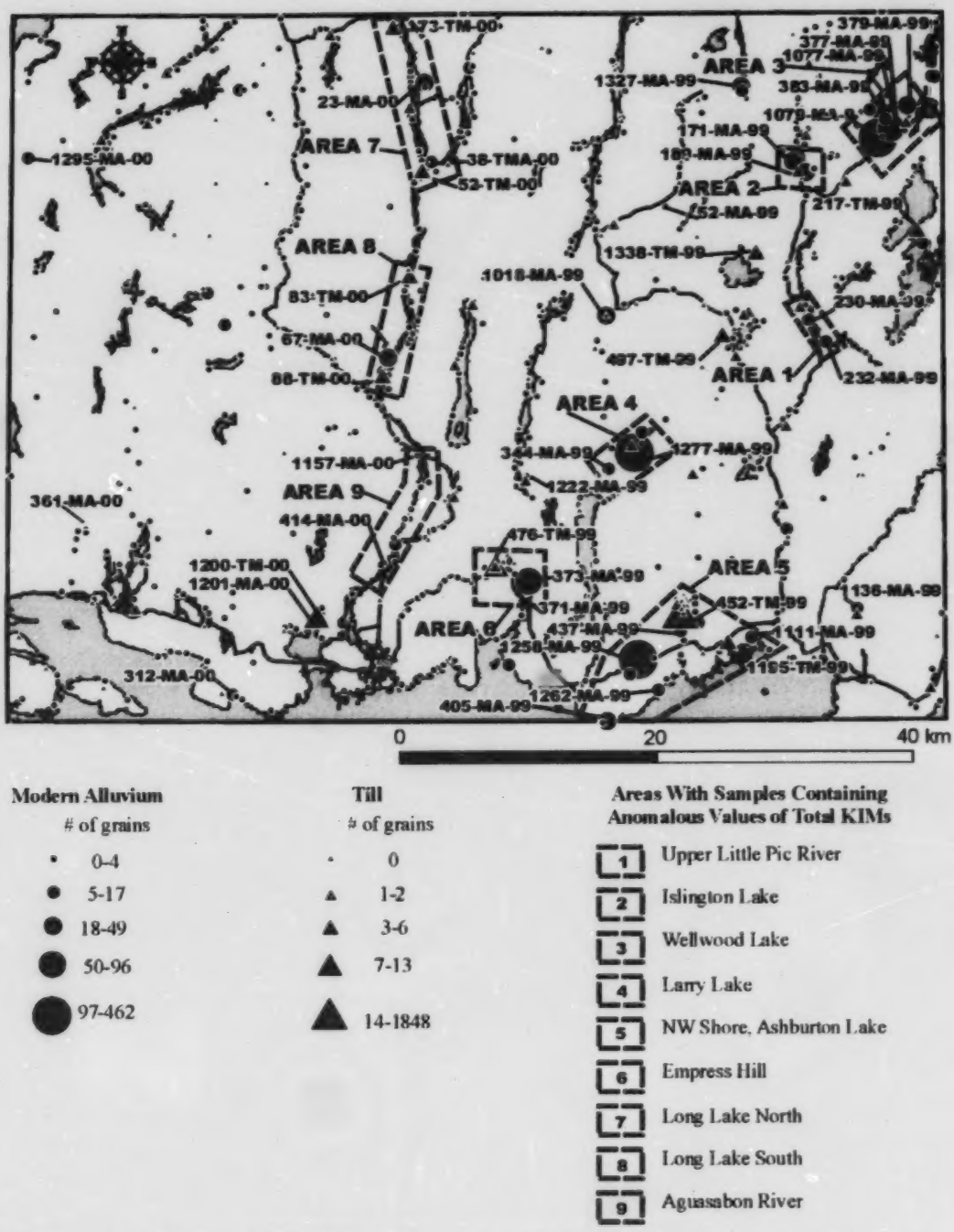


Figure 18. Distribution of total KIMs for the Schreiber-Killala Lake region (data combined from Morris et al. 2000 and this report).

Area	Sample	Justification
1) Upper Little Pic River	230-Ma-99	**1 G10, 1 EcI**, 1 IM, 2 Cr
	232-Ma-99	**1 G10, 5 G9**, 1 DC
2) Islington Lake	171-Ma-99	**2 G9, 24 Cr*, 8 IM**
	189-Ma-99	**2 G10, 4 G9, 1 EC II, 3 MEG, 14 Cr*, 2 IM**
3) Wellwood Lake	377-Ma-99	**14 IM***
	379-Ma-99	**1 MEG, 40 IM***
	383-Ma-99	**1 MEG, 7 IM***
	1077-Ma-99	**2 G9, 3 MEG, 71 IM***, 4 Cr
	1079-Ma-99	**1 MEG, 459 IM***, 2 Cr
4) Larry Lake	344-Ma-99	1 DC, 1 IM, **13 Cr***
	1277-Ma-99	**2 MEG, 273 IM***, 2 Cr
5 NW Shore, Asburton Bay	405-Ma-99	**2 DC, 36 Cr***
	437-Ma-99	**1 G9, 4 IM**, 3 Cr
	452-Tm-99	1 IM, **1847 Cr***
	1111-Ma-99	**10 IM, 1 KimEx, 6 Cr**
	1195-Tm-99	**3 Cr**
	1258-Ma-99	**2 DC, 350 Cr***
	1262-Ma-99	**2 DC*, 15 Cr***
6) Empress Hill	371-Ma-99	**1 DC, 95 Cr***
	373-Ma-99	**75 Cr***
	476-Tm-99	**8 Cr***
7) Long Lake North	23-Ma-00	**2 "G9s", 20 Cr***, 1 DC
	38-Ma-00	1 Cr, **7 DC**
	52-Tm-00	**4 Cr**
	73-Tm-00	**3 DC**
8) Long Lake South	67-MA-00	**2 Cr, 24 IM***
	83-TM-00	**6 DC**
	88-TM-00	**1 "G9", 2 Cr, 2 IM**

Table 6. Proposed exploration targets for kimberlite, Schreiber-Killala Lake region. Those values with an (*) are based on re-calculating the number of grains, picked and submitted to OGL for microprobe analysis, to an estimated number of grains within the concentrate. Detailed discussion on how values were determined from sites with an estimated value is presented in the data plotting parameter section of this report.

Table 6. (Continued).

Area	Sample	Justification
9) Aguasabon River	414-MA-00	1 "G10"
	1157-MA-00	1 "G10", 1 MEG, 1 Cr, 1 DC

Individual Sites	52-Ma-99	1 If-Cr, 1 Cr
	217-Tm-99	3 Cr
	497-Tm-99	2 DC, 1 Cr
	1018-Ma-99	1 MEG, 2 IM, 46 Cr*
	1136-Ma-99	8 Dc, 1 IM
	1222-Ma-99	1 G10
	1327-Ma-99	1 G9, 1 DC, 11 IM, 14 Cr
	1338-Tm-99	4 IM, 1 Cr
	312-Ma-00	9 Cr
	361-Ma-00	2 If-Cr
	1200-Tm-00	1 If-Cr, 8 Cr
	1201-Ma-00	1 If-Cr, 6 Cr
	1295-Ma-00	2 Cr, 5 IM, 5 DC

G10/G9; Cr-pyrope garnet
EcI/EcII; Eclogitic garnet
MEG; Megacryst
Cr; Chromite
If-Cr; Inclusion field chromite
KimEx; Kimberlitic chromite
DC; Cr-diopside
IM; Mg-ilmenite

and individual sites recommended in this report for base metal exploration (Table 9; Morris 2001a).

During the course of picking and identifying MMSIMs®, it was noted that some pyrite, chalcopyrite and sphalerite grains from samples 160-Ma-00, 179-Ma-00, 181-Ma-00 and 185-Ma-00 were cracked, suggesting they are damaged grains derived from mill tailings, ball mills or mine roads. Sample 179-Ma-00 was collected from a stream flowing away from the Winston Lake mine and therefore, likely does contain grains from the processing of ore. However, it is more difficult to explain how grains associated from the other 3 sites could be associated with ore processing.

Samples 181-Ma-00 and 185-Ma-00 were both collected south of the Winston Lake mine site and east of the haul road. To the author's knowledge, there are no secondary roads east of the main haul road towards the sample sites, nor were there any ball mills or ore processing near the sample sites. Blasting wire was observed in the vicinity of sample 185-Ma-00 suggesting that blast trenching of the rock may have produced cracked gahnite grains. There were no trenches observed in the area and trenching is not recorded in any assessment files.

Sample 160-Ma-00 was collected north of Duck Lake, east of Northline Lake. Although the site can be accessed by a poor logging road, physical evidence of milling or

Mineral	General Statistics					
	Number of Sample Sites With Grains		Total Grains		Maximum per Sample Site	
	MA	Till	MA	Till	MA	Till
Anthophyllite*	3	0	250	0	200	0
Barite*	6	0	875	0	519	0
Chalcopyrite	29	4	294	10	38	6
Corundum	2	0	12	0	2	0
Chromite*	29	9	78	21	20	8
Cr-rutile	12	0	14	0	2	0
Fluorite	2	0	3	0	2	0
Gahnite*	8	1	159	2	75	2
Grossular	2	0	9	0	0	0
Low-Cr Diopside*	90	12	623	59	422	45
Loellingite	2	0	2	0	1	0
Mn-epidote	12	3	14	3	2	1
Molybdenite	17	0	41	0	11	0
Native Gold	22	8	35	8	1	2
Olivine	18	0	37	0	18	0
Pyrite*	161	25	24155	5006	12000	1500
Red Rutile	29	6	47	11	5	4
Sapphirine	2	1	2	1	1	1
Sapphirine-Cor.	1	0	1	0	1	0
Sphalerite	5	0	59	0	40	0
Spinel	23	1	28	1	3	1

Mineral (%)	General Statistics					
	Number of Sample Sites With Grains		Avg. Percentage Of Grains Within Sample Mineral Concentrate		Maximum Percentage Sample Site	
	MA	Till	MA	Till	MA	Till
Goethite*	94	25	0.41	2.17	40	90
Kyanite*	126	23	0.19	0.11	8	0.25
Orthopyroxene*	186	42	3.19	0.79	70	7
Sillimanite*	90	24	0.11	0.12	1	0.25
Spessartine*	39	4	0.05	0.02	1	0.25
Staurolite*	189	45	0.37	0.42	6	4

Table 7. Summary statistics for MMSIMs®. An (*) indicates that the values associated with that particular MMSIM® are re-calculated to an estimated number of grains within a sample's heavy mineral concentrate. A summary of the number of grains observed and picked per site as well as those sites with an estimated number of grains is summarized in Appendix 2 (this report). Detailed discussion on how values were determined from sites with an estimated value is presented in the data plotting parameter section of this report.

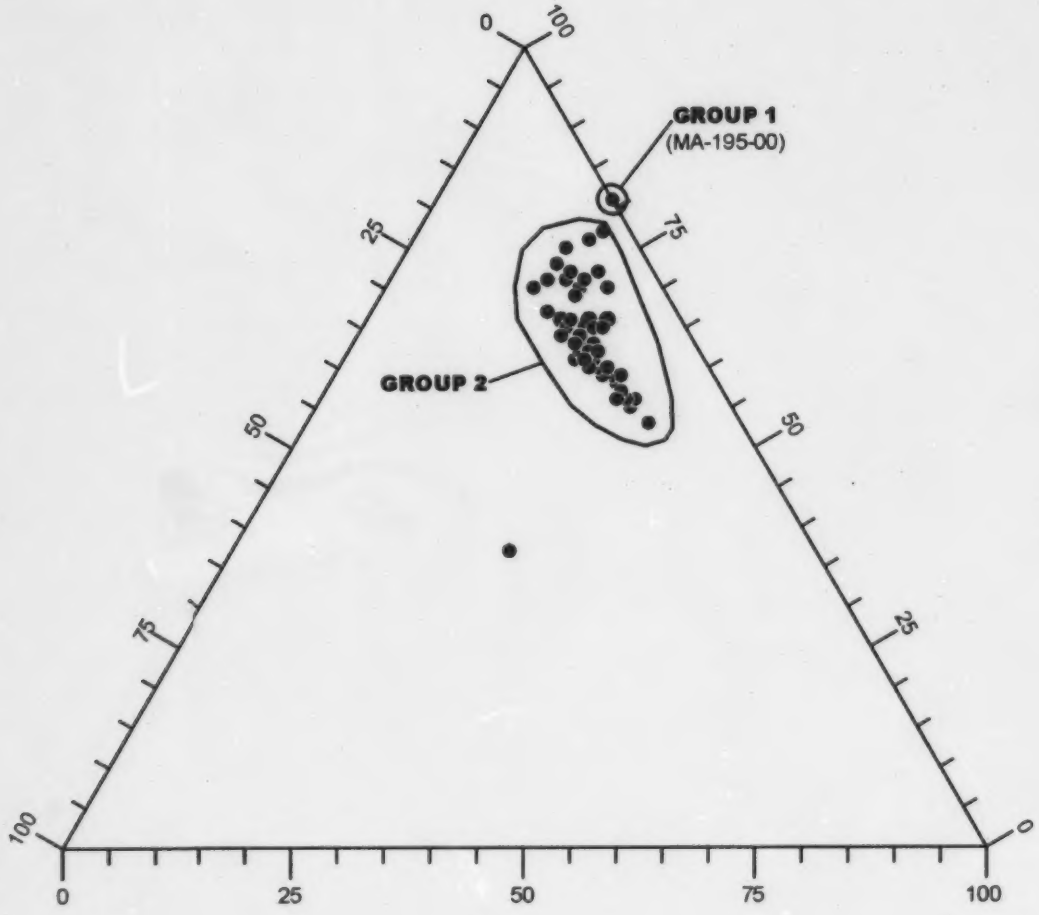


Figure 19. Ternary plot of gahnite chemistry. Group 1 corresponds to geochemistry of gahnite recovered from pegmatite in the Separation Lake Area, northwestern Ontario (Morris, Breaks et al. 1997). Group 2 corresponds to geochemistry of gahnite recovered from various base metal deposits in northern Ontario (Morris, Breaks et al. 1997).

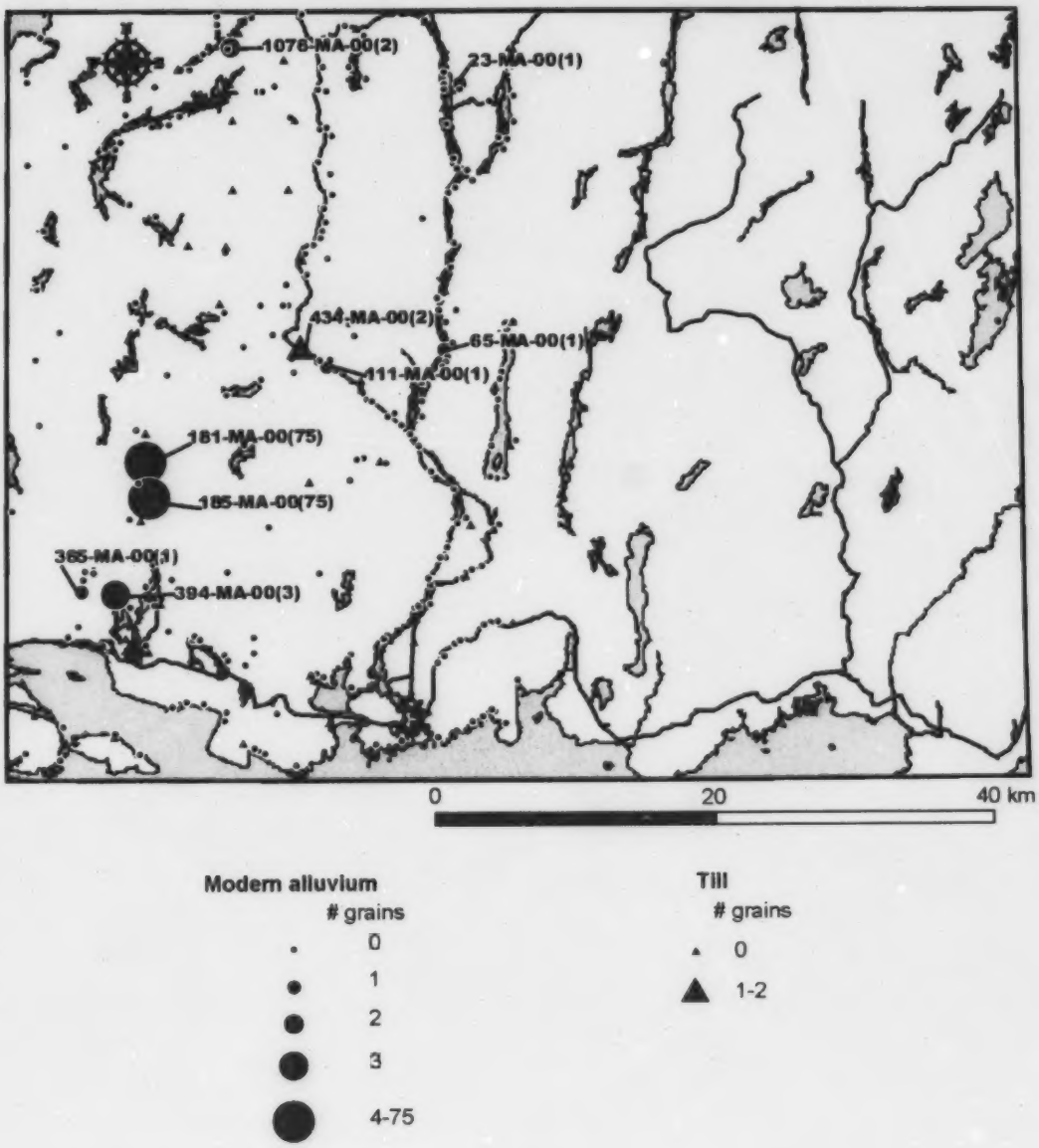
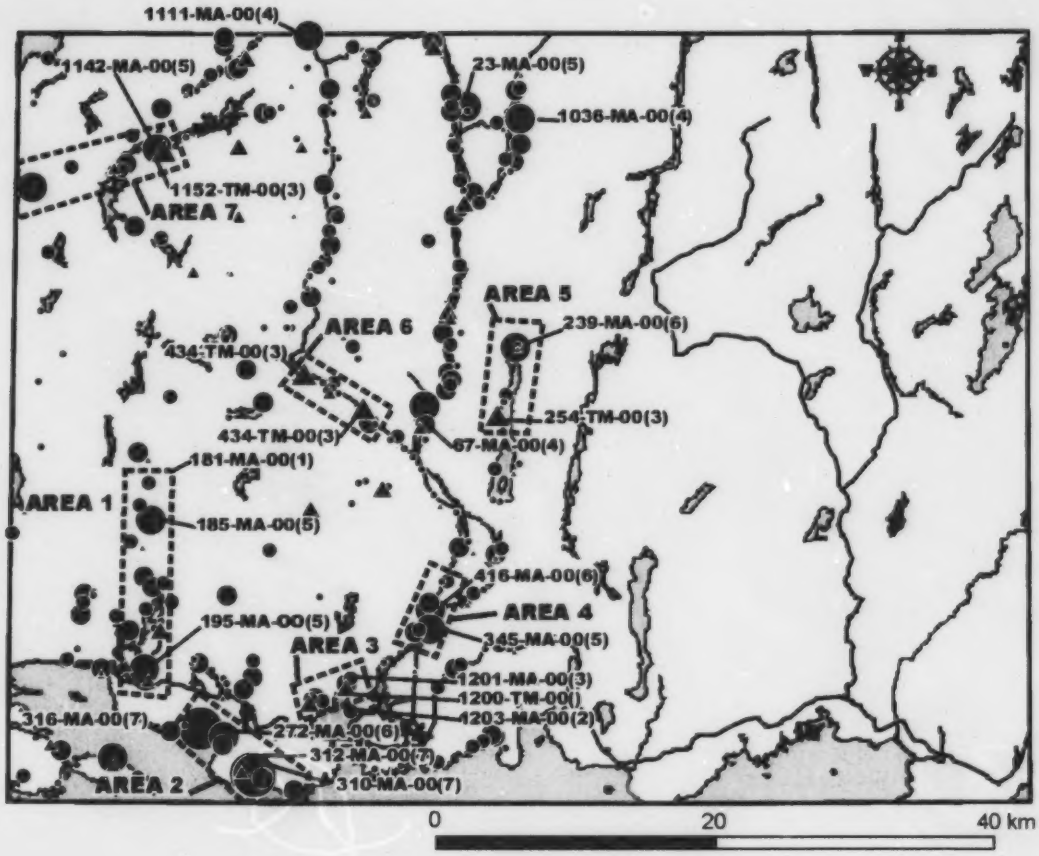


Figure 20. Regional distribution of gahnite grains, Schreiber area. The number in brackets represents the estimated number of gahnite grains recovered from that site.



Modern Alluvium

# of grains
0
1
2-3
4-6
7-8

Till

# of grains
0
1
2
3

Areas With Samples Containing Anomalous Values of Ranked MMSIMs

1. Winston Lake Road
2. Collingwood Bay/Worthington Bay
3. Hays Lake
4. Aguasabon River
5. North Owl Lake
6. Wintering Road South
7. Kamuck Lake

Figure 21. Regional distribution of MMSIM grains, Schreiber area. Value in brackets indicates the number of anomalous MMSIMs recovered from that site. Application of the ranking system is discussed in the plotting parameter section.

Area	Samples	Justification
1) Winston Lake Road	181-Ma-00	75 Gah*
	185-Ma-00	9 Ch, 1 Co, 75 Gah*, 3 Rr, 3% Sps*
	195-Ma-00	1 Co, 1 Cru, 14 Ol, 40 Sph*
2) Collingwood Bay/ Worthington Bay	272-Ma-00	28 Ch, 2 Co, 2 Cru, 2500 Py*, 1 Sp, 1% St*
	310-Ma-00	21 Ba, 0.5% Gth*, 1 Gr, 13 Ldc, 50% Or*, 300 Py*
	312-Ma-00	1 Co, 9 Cr, 1 Cru, 47 Ldc*, 3 Ng, 3 Ol, 1 Sp
	316-Ma-00	1 Ng, 18 Ol, 20% Or*, 300 Py*, 1 Rr, 1 % Sps*, 1% St*
3) Hays Lake	1201-Ma-00	5 Ch, 6 Cr, 442 Ldc*
	1203-Ma-00	21 Ldc
	1200-Tm-00	8 Cr, 45 Ldc*
4) Aguasabon River	345-Ma-00	1 Co, 1 Cru, 1 Ol, 1 Sp
	416-Ma-00	1 Co, 1 Cru, 6 Ldc, 2 Rr, 1% St*
5) North Owl Lake	239-Ma-00	1 Co, 1 Cru, 5 Ng, 300 Py*, 1 Sp
	254-Tm-00	1 Ldc, 1 Me, 1 Ng
6) Wintering Road South	434-Tm-00	2 Gah, 1 Ldc, 500 Py*
	439-Tm-00	4% Gth*, 1 Ldc, 1500 Py*
7) Kamuck Lake	1142-Ma-00	13 Ch, 2 Cr, 1 Mo, 600 Py*, 2% St*
	1152-Tm-00	2 Ch, 1 Ldc, 1500 Py*
Individual Sites	23-Ma-00	20 Cr, 1 Gah, 1 Gr, 1 Rr, 2 Sp
	67-Ma-00	6 Ch, 2 Cr, 1 Me, 5 Rr
	1036-Ma-00	6 Mo, 1 Rr, 1 Sph, 1 Sp
	1111-Ma-00	1 Co, 2 Rr, 1 Sp. 2% St*

Ba; Barite
Ch; Chalcopyrite
Cru; Cr-rutile
Co; Corundum
Gah; Gahnite
Gr; Grossular
Gth; Goethite
Ldc; Low-Cr diopside
Mo; Molybdenite
Me; Mn-epidote
Ng; Native gold
Ol; Olivine
Or; Orthopyroxene
Rr; Red rutile
Sp; Spinel
Sph; Sphalerite
Sps; Spessartine
St; Staurolite

Table 8. Recommended areas for base metal exploration, Schreiber area. Those values with an (*) are based on re-calculating the number of grains, picked and submitted to the OGL for microprobe analysis, to an estimated value of the number of grains within that sample's heavy mineral concentrate. A summary of the number of grains observed and picked per site as well as those sites with an estimated number of grains are summarized in Appendix 2 (this report). Detailed discussion on how these values were determined from sites with estimated values is presented in the data plotting parameter section of this report.

Anomalous Heavy Mineral Signature for Base Metal Mineralization (This Study)	Anomalous Lake Sediment Geochemical Signature for Base Metal Mineralization (Dyer 1997)	Anomalous Lake Sediment Geochemical Signature for PGE Mineralization (OGS 2000b)	Anomalous Humus and Till "B" and "C" Geochemical Signature for Base Metal Mineralization (Morris 2001a)
Area 1. Winston Lake Road	Yes	Yes	Yes
Area 2. Collingwood Bay, Worthington Bay	Yes	No	No
Area 3. Hays Lake	Yes	No	Yes
Area 4. Aguasabon River	No	No	No
Area 5. North Owl Lake	No	No	No
Area 6. Wintering Road South	Yes	No	No
Area 7. Kamuck Lake	No data	No data	No
Individual Sites			
23-Ma-00	Yes	No	No
67-Ma-00	Yes	No	Yes
1036-Ma-00	No	No	No
1111-Ma-00	No data	No data	Yes

Table 9. Comparison of base metal data sets, Schreiber area. This table compares base metal heavy mineral signatures to other data sets that also indicate local base metal mineralization.

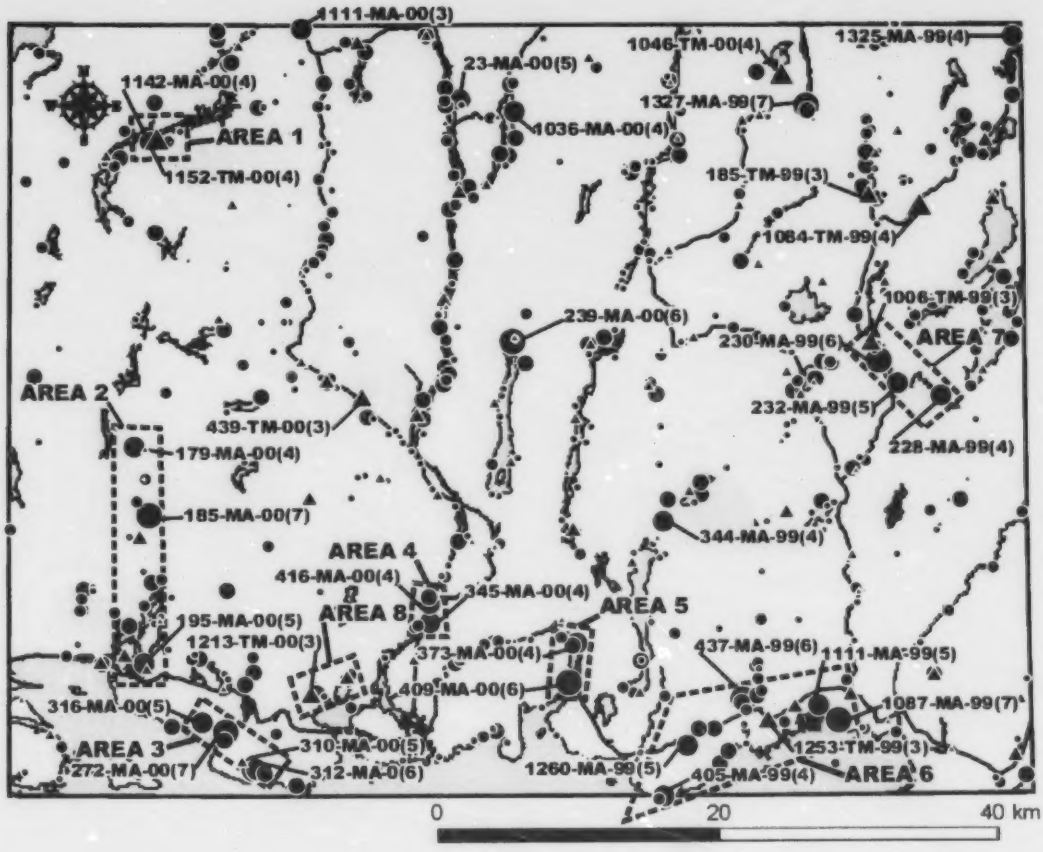
blasting was not observed in the field and there is no record in assessment files of such activity occurring in this area.

In addition to the areas and individual sites highlighted as potential base metal targets, the Hays Lake area is worth highlighting as a PGE exploration target. During the course of sample processing, a high number of low-Cr diopsides, chalcopyrite and chromite grains were recovered from samples 1201-Ma-00 and 1200-Tm-00. It is suggested that these anomalies are "indicative of Ni-Cu-PGE fertility" (Morris 2002, Appendix 10). The till geochemistry from sample 1200-Tm-00, sampled in close proximity to sample 1200-Ma-00, indicates local magmatic sulphide mineralization (Morris 2001a).

Proposed Base Metal Exploration Targets, Schreiber-Killala Lake Area

As previously discussed, the Schreiber overburden mapping and sampling program is a westward extension of the Killala Lake project (Morris et al. 2000). Other than the olivine data, all other data is comparable as field sampling, laboratory processing and geochemical interpretation procedures were the same.

After adjusting the olivine data for the Killala Lake area, and combining the heavy mineral data sets for both the Schreiber and Killala Lake project, 8 areas and 11 individual sites are proposed for base metal exploration (Figure 22, Table 10). Some of the values used to determine those sites with significant MMSIMs® were re-calculated to



Modern Alluvium

Rank #	
0	•
1	•
2-3	●
4-5	●
6-7	●

Till

Rank #	
0	·
1	▲
2	▲
3	▲
4	▲

Areas With Samples Containing Anomalous Values of Ranked MMSIMs

1	Kamuck Lake	2	Winston Lake
3	Collingwood Bay Worthington Bay	4	Aguasabon River
5	Jackfish Lake	6	NW shore, Ashburton Bay
7	Upper Pic River	8	Hays Lake

Figure 22. Base metal exploration targets. Schreiber-Killala area. This diagram illustates the distribution of sample sites with anomalous numbers of MMSIM.* Application of the ranking system is discussed in the text. Data combined from Morris et al. 2000 and this report.**

* base metal exploration targets, Schrieber-Killala Lake area.

** Value in brackets indicates the number of anomalous MMSIMs recovered from That site.

Area	Sample	Justification
1) Kamuck Lake	1142-Ma-00	13 Ch, 1 Mo, 600 Py*, 2% St*
	1152-Tm-00	3 Ch, 1995 Py*, 1 Rr, 0.33 Sil*
2) Winston Lake	179-Ma-00	37 Ch, 200 Py*, 10 Sph, 1% St*
	185-Ma-00	9 Ch, 1 Co, 75 Gah*, 1 Rr, 1 SaCor, 6 Sph, 3% Sps*
	195-Ma-00	1 Co, 1 Cru, 1 Gah, 15 Ol, 40 Sph*
3) Collingwood Bay/ Worthington Bay	272-Ma-00	1 Ba, 28 Ch, 2 Co, 2 Cru, 2500 Py*, 1 Sp, 1% St*
	310-Ma-00	21 Ba, 0.5% Gth*, 1 Gr, 50% Or*, 300 Py*
	312-Ma-00	1 Co, 9 Cr, 1 Cru, 47 Ldc*, 3 Mg, 1 Sp
	316-Ma-00	20% Or*, 300 Py*, 1 Rr, 1% Sps*, 1% St*
4) Aguasabon River	345-Ma-00	1 Co, 1 Cru, 15 Ol, 1 Sp
	416-Ma-00	1 Co, 1 Cru, 2 Rr, 1% St*
5) Jackfish Lake	373-Ma-99	75 Cr*, 2 Cru, 400 Py*, 2 Rr
	409-Ma-99	3 Cr, 1 Cru, 0.5% Gth*, 1 Me, 1 Rr, 4 Sp
6) NW Shore, Ashburton Bay	405-Ma-99	36 Cr*, 0.5% Gth*, 43 Ldc*, 4 Ol
	437-Ma-99	7 Ch, 3 Cr, 0.5% Gth*, 4000 Py*, 1 Sp, 1% St*
	1087-Ma-99	5 Ch, 1 Fl, 2 Gah, 15 Gal, 41 Ldc*, 11 Ol, 200 Sph*
	1111-Ma-99	6 Cr, 1 Cru, 18 Ol, 1 Rr, 1 Sph
	1260-Ma-99	7 Ch, 3 Cr, 1 Gah, 4 Ol, 2 Sp
	1253-Tm-99	5 Cru, 30 Ldc*, 1 Sp
7) Upper Pic River	228-Ma-99	1 Cru, 0.5% Gth*, 41 Ldc*, 1 Rr
	230-Ma-99	3 Co, 5 Cru, 1 Gah, 5 Rr, 2 Tou, 1 Ve
	232-Ma-99	1 Cru, 1 Gah, 0.5% Ky*, 2 Me, 1 Rr
	1006-Tm-99	2 Cru, 0.5% Ky*, 9 Ng
8) Hays Lake	1201-Ma-00	5 Ch, 6 Cr, 442Ldc
	1203-Ma-00	21 Ldc
	1200-Tm-00	8 Cr, 45 Ldc
	1213-Tm-00	1 Rr, 0.31% Si, 4% St

Table 10. Recommended areas for base metal exploration, Schreiber-Killala Lake area. Those values with an (*) are based on re-calculating number of grains, picked and submitted to OGL for microprobe analysis, to an estimated number of grains within that sample's heavy mineral concentrate. Detailed discussion on how these values were determined from sites with estimated values is presented in the data plotting parameter section of this report.

Table 10. (Continued).

Individual Sites	344-Ma-99	1 Co, 13 Cr, 2 Cru, 2 Rr
	1325-Ma-99	343 Ldc, 2 Mo, 1 Ms, 10% Or
	1327-Ma-99	1 Co, 14 Cr, 2 Cru, 1 Gah, 66 Ldc, 2 Rr, 2 Sp
	23-Ma-00	20 Cr, 1 Gah, 1 Gr, 1 Rr, 2 Sp
	239-Ma-00	1 Co, 1 Cru, 0.5% Ky, 5 Ng, 300 Py, 1 Sp
	1036-Ma-00	6 Mo, 1 Rr, 1 Sph, 1 Sp
	1111-Ma-00	1 Co, 2 Rr, 1 Sp, 2% St
	439-Tm-00	6% Gth, 0.34% Ky, 2055 Py

Ba; Barite
Ch; Chalcopyrite
Cru; Cr-rutile
Co; Corundum
Fl; Fluorite
Gah; Gahnite
Gal; Galena
Gr; Grossular
Gth; Goethite
Ky; Kyanite
Ldc; Low-Cr diopside
Me; Mn-epidote
Mo; Molybdenite
Ms; Mg-spinel
Ng; Native gold
Ol; Olivine
Or; Orthopyroxene
Rr; Red rutile
Sp; Spinel
Sph; Sphalerite
Sps; Spessartine
St; Staurolite
Tou; Tourmaline
Ve; Vesuvianite

account for an estimated number of grains within the heavy mineral concentrate (*see* Table 7; Morris et al. 2000).

Gold

The number of gold grains recovered in this study relative to other, similar studies, is very small (Bajc 1994, 1999; Bernier 1994) and is reflected in the gold grain counts (Table 11). The distribution of sites with gold grains is summarized on Figure 23. Most gold grains recovered from both the till and modern alluvium samples were reshaped suggesting some distance of transport (Table 11). As grain numbers are low and most are reshaped, it is not possible to recommend areas for gold exploration. The reader is referred to Morris et al. (2000) for the summary of gold grain data from Killala Lake.

Carbonatite

Heavy minerals associated with carbonatite were recovered from several samples (Table 12). However, there is less variety and numbers of heavy mineral indicators for carbonatite from samples collected in the Schreiber area than in the Killala Lake area (Morris et al. 2000). Many samples collected in the Schreiber area commonly have only one type of carbonatite-related heavy mineral recovered from the sample's heavy mineral concentrate (e.g., 367-Ma-00, an estimate of 519 barite grains). This is unlike sample sites with anomalous numbers of carbonate-related heavy minerals from the Killala Lake area where there is a mix of carbonatite-related minerals (*see* sample 16-Ma-99, Morris et al. 2000). In addition, the heavy minerals indicating the presence of carbonatite for the Schreiber area are also associated with other types of mineralization. For example, barite is not only associated with carbonatite, but also metamorphosed volcanosedimentary massive sulphide deposits (Averill 1999).

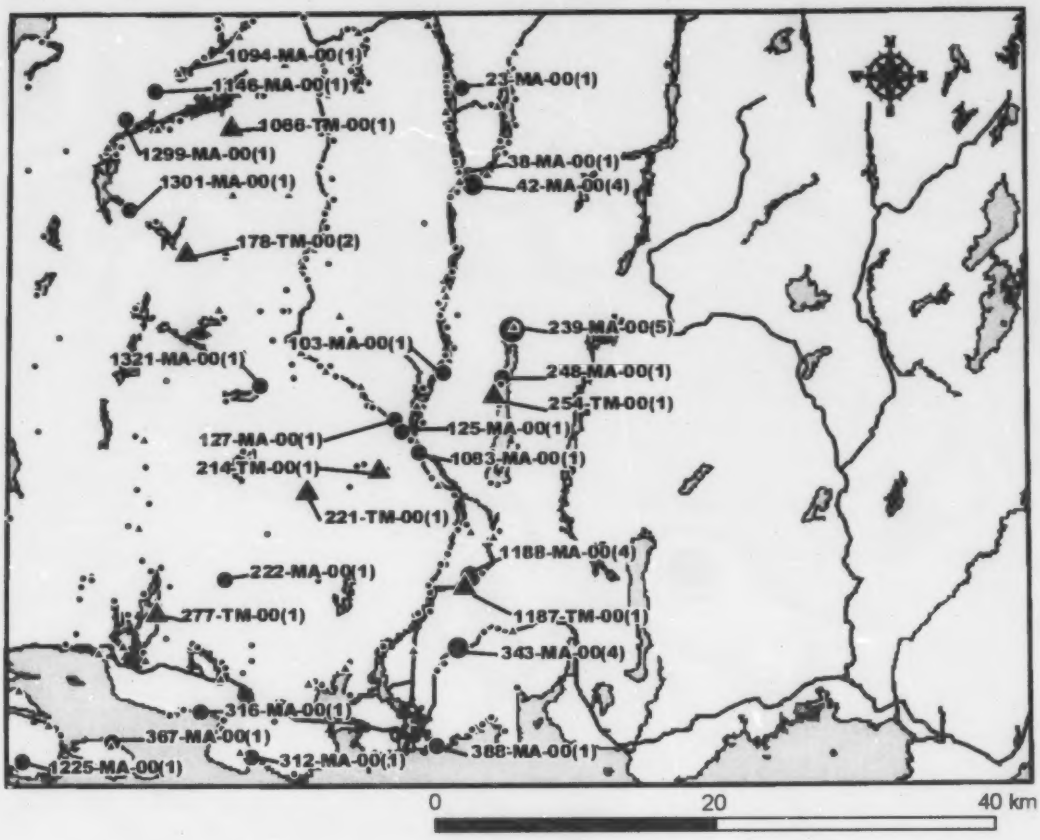


Figure 23. Distribution of total gold grains, Schreiber area. The number in brackets represents the total number of gold grains recovered from that site.

Sample #	Easting	Northing	Total	Reshaped	Modified	Pristine
23-Ma-00	495962	5449719	1	1	0	0
38-Ma-00	496484	5443541	1	1	0	0
42-Ma-00	496894	5442737	4	4	0	0
103-Ma-00	494562	5429170	1	1	0	0
125-Ma-00	491055	5425848	1	1	0	0
127-Ma-00	491540	5424944	1	1	0	0
222-Ma-00	478937	5414277	1	1	0	0
239-Ma-00	499647	5432367	5	5	0	0
248-Ma-00	498889	5428789	1	1	0	0
312-Ma-00	480831	5401612	1	1	0	0
316-Ma-00	477129	5404789	1	1	0	0
343-Ma-00	495759	5409333	4	0	3	1
367-Ma-00	470864	5402730	1	1	0	0
388-Ma-00	494085	5402273	1	0	0	1
1083-Ma-00	492856	5423438	1	1	0	0
1094-Ma-00	475751	5450847	1	1	0	0
1146-Ma-00	473929	5449655	1	1	0	0
1188-Ma-00	496624	5414461	4	4	0	0
1225-Ma-00	464341	5401257	1	1	0	0
1299-Ma-00	471837	5447588	1	1	0	0
1301-Ma-00	472042	5441121	1	1	0	0
1321-Ma-00	481400	5428300	1	1	0	0
178-Tm-00	476282	5438147	2	2	0	0
214-Tm-00	490133	5422331	1	1	0	0
221-Tm-00	484988	5420771	1	1	0	0
254-Tm-00	498367	5427658	1	1	0	0
277-Tm-00	474197	5412060	1	1	0	0
332-Tm-00	500514	5386568	1	1	0	0
1066-Tm-00	479556	5447053	1	1	0	0
1187-Tm-00	496271	5413982	1	0	0	1

Table 11. Summary list of samples with gold grains, Schreiber area.

As the mix of carbonatite heavy mineral indicators is poor and the heavy minerals cited as indicators for carbonatite are also indicators of other types of mineralization, the summary list of areas and sites presented in Table 13 are regarded as poor exploration targets for carbonatite. When plotted on a proportional dot diagram (Figure 24) the Schreiber Channel area stands out as an area of interest due to the 3 sites with large numbers of barite grains. The number of grains indicated at other sites are primarily a reflection of the distribution of rutile grains (Table 13).

Mineral	Augite	Barite	Rutile	Ti-An.
Source				
17-Ma-00	0	0	1	0
23-Ma-00	0	0	1	0
34-Ma-00	0	0	1	0
36-Ma-00	0	0	1	0
42-Ma-00	0	0	1	0
52-Tm-00	0	0	4	0
53-Ma-00	0	0	2	0
55-Ma-00	1	0	2	0
63-Ma-00	0	0	1	0
65-Ma-00	0	0	1	0
67-Ma-00	0	0	4	0
78-Tm-00	0	0	2	0
99-Ma-00	0	0	2	0
103-Ma-00	0	0	2	1
131-Ma-00	0	1	0	0
132-Ma-00	0	0	2	0
138-Ma-00	0	0	3	0
173-Tm-00	0	0	1	0
185-Ma-00	0	0	2	0
259-Ma-00	0	0	2	0

Mineral	Augite	Barite	Rutile	Ti-An.
Source				
272-Ma-00	2	1	0	0
299-Ma-00	0	325*	0	0
310-Ma-00	0	21*	0	0
316-Ma-00	0	0	1	0
320-Ma-00	0	8	0	0
361-Ma-00	0	0	1	0
367-Ma-00	0	519*	0	0
392-Ma-00	0	0	1	0
398-Ma-00	0	0	1	0
416-Ma-00	0	0	2	0
440-Ma-00	0	0	1	0
1036-Ma-00	0	0	1	1
1082-Tm-00	0	0	2	0
1111-Ma-00	0	0	2	0
1113-Ma-00	0	0	2	0
1146-Ma-00	0	0	1	0
1152-Tm-00	0	0	1	0
1205-Ma-00	0	0	1	0
1207-Ma-00	2	0	0	0
1213-Tm-00	0	0	1	0

Ti-An; Titanium Andradite

Table 12. Summary of carbonatite indicator minerals, Schreiber area. Those values with an (*) are based on an estimate of the number of grains within a heavy mineral concentrate. See Appendix 2 (this report) for a summary of observed vs. estimated grains.

It is interesting to note that sample 195-Ma-00 contained a gahnite with chemistry indicative of rare-element pegmatite (*see* section on Metamorphic or Magmatic Massive Sulphide Indicator Minerals). This sample was taken within the Schreiber Channel Area (Figure 24).

Area	Sample	Justification
1) North Long Lake	53-Ma-00	2 Ru
	55-Ma-00	1 Aug, 2 Ru
	52-Tm-00	4 Ru
	78-Tm-00	2 Ru
2) South Long Lake	67-Ma-00	4 Ru
	99-Ma-00	2 Ru
	103-Ma-00	2 Ru, 1 T-An
3) Schreiber Channel	272-Ma-00	2 Aug, 1 Ba
	299-Ma-00	325 Ba*
	310-Ma-00	21 Ba*
	320-Ma-00	8 Ba
	367-Ma-00	519 Ba*
Individual Sites	132-Ma-00	2 Ru
	138-Ma-00	3 Ru
	185-Ma-00	2 Ru
	259-Ma-00	2 Ru
	416-Ma-00	2 Ru
	1036-Ma-00	1 Ru, 1 T-An
	1111-Ma-00	2 Ru
	1113-Ma-00	2 Ru
	1207-Ma-00	2 Aug.
	1082-Tm-00	2 Ru

Aug = Augite Ru = Rutile
Ba= Barite T-An = Titanium andradite

Table 13. Distribution of carbonatite indicator minerals, Schreiber area. An (*) indicates an estimate of the number of grains within a sample's heavy mineral concentrate. See Appendix 2 (this report) for observed vs. estimated grains.

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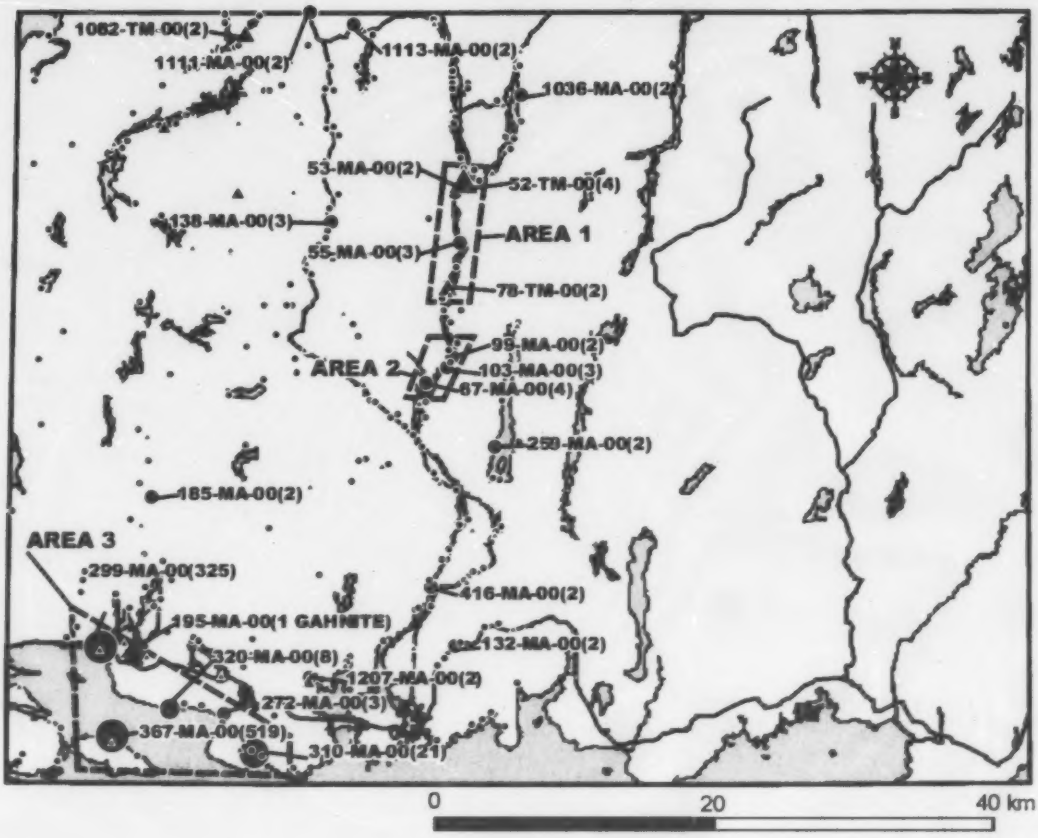

Figure 24. Carbonatite indicator minerals, Schreiber area. Note that sample 195-MA-00 is the only one with a rare element pegmatite indicator. Value in brackets indicates the number of indicator minerals recovered from that site. The bracketed values for 299-MA-00 and 367-MA-99 are based on an estimated number of grains within a heavy mineral concentrate.

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APPENDIX 1: Sample Site Locations

Summary List of Abbreviations

Fm:	Felsic metavolcanic
Gab:	Gabbro
Gl:	Glaciolacustrine
Gn:	Gneiss
Gt:	Granite
Ma:	Modern alluvium
Map:	Modern alluvium pebbles
Ms:	Metasedimentary
Mv:	Mafic metavolcanic
Tm:	Till
Tp	Till Pebbles
Um:	Ultramafic

Appendix 1: Sample Site Locations

Modern Alluvium Samples

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
1-Ma-00	485700	5444139	Gn
2-Ma-00	486540	5441872	Ms
3-Map-00	486540	5441872	Ms
4-Ma-00	486751	5441745	Ms
5-Map-00	486751	5441745	Ms
6-Ma-00	486066	5440773	Gn
7-Map-00	486066	5440773	Gn
13-Ma-00	485928	5439102	Gn
14-Map-00	485928	5439102	Gn
15-Ma-00	485816	5438599	Ms
16-Map-00	485816	5438599	Ms
17-Ma-00	485265	5438141	Ms
18-Map-00	485265	5438141	Ms
19-Ma-00	484667	5437464	Ms
20-Map-00	484667	5437464	Ms
21-Ma-00	495901	5449382	Ms
22-Map-00	495901	5449382	Ms
23-Ma-00	495962	5449719	Ms
24-Map-00	495962	5449719	Ms
25-Ma-00	494846	5449755	Ms
26-Map-00	494846	5449755	Ms
27-Ma-00	494850	5449347	Ms
28-Map-00	494850	5449347	Ms
34-Ma-00	494902	5446841	Gn
35-Map-00	494902	5446841	Gn
36-Ma-00	494835	5450668	Ms
37-Map-00	494835	5450668	Ms
38-Ma-00	496484	5443541	Ms
39-Map-00	496484	5443541	Ms
40-Ma-00	495625	5442246	Ms
41-Map-00	495625	5442246	Ms
42-Ma-00	496894	5442737	Ms
43-Map-00	496894	5442737	Ms
44-Ma-00	495466	5444313	Ms
45-Map-00	495466	5444313	Ms
46-Ma-00	495725	5443625	Ms
47-Map-00	495725	5443625	Ms
53-Ma-00	495122	5441915	Gn
54-Map-00	495122	5441915	Gn
55-Ma-00	495430	5438252	Ms
56-Map-00	495430	5438252	Ms
57-Ma-00	493501	5454322	Ms
58-Map-00	493501	5454322	Ms
59-Ma-00	495184	5436529	Ms
60-Map-00	495184	5436529	Ms
61-Ma-00	495540	5433351	Ms
62-Map-00	495540	5433351	Ms
63-Ma-00	494340	5433388	Ms
64-Map-00	494340	5433388	Ms
65-Ma-00	494736	5430449	Gt
66-Map-00	494736	5430449	Gt
67-Ma-00	493019	5428052	Mv
68-Map-00	493019	5428052	Mv
89-Ma-00	493267	5440035	Gn
90-Map-00	493267	5440035	Gn
91-Ma-00	494351	5434194	Ms
92-Map-00	494351	5434194	Ms
93-Ma-00	494162	5434251	Ms
94-Map-00	494162	5434251	Ms
95-Ma-00	494817	5432414	Ms
96-Map-00	494817	5432414	Ms
97-Ma-00	495356	5430966	Gt
98-Map-00	495356	5430966	Gt
99-Ma-00	494965	5429931	Gt
100-Map-00	494965	5429931	Gt
101-Ma-00	494861	5429575	Gt
102-Map-00	494861	5429575	Gt
103-Ma-00	494562	5429170	Gt
104-Map-00	494562	5429170	Gt
105-Ma-00	486490	5429671	Ms
106-Map-00	486490	5429671	Ms
107-Ma-00	485843	5429820	Ms
108-Map-00	485843	5429820	Ms
109-Ma-00	485731	5429732	Ms
110-Map-00	485731	5429732	Ms
111-Ma-00	486204	5429222	Mv
112-Map-00	486204	5429222	Mv
118-Ma-00	486833	5428950	Mv
119-Ma-00	489022	5426885	Gt
120-Map-00	489022	5426885	Gt
121-Ma-00	489426	5426759	Gt
122-Map-00	489426	5426759	Gt
123-Ma-00	490594	5425549	Gt
124-Map-00	490594	5425549	Gt
125-Ma-00	491055	5425848	Gt
126-Map-00	491055	5425848	Gt
127-Ma-00	491540	5424944	Gt
128-Map-00	491540	5424944	Gt

Appendix 1: Sample Site Locations (Continued)

Modern Alluvium Samples (Continued)

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
129-Ma-00	492251	5424383	Gt
130-Map-00	492251	5424383	Gt
131-Ma-00	497451	5410447	Gt
132-Ma-00	495381	5409098	Gt
133-Map-00	495381	5409098	Gt
134-Ma-00	494528	5408164	Gt
135-Ma-00	494114	5407638	Gt
136-Ma-00	486650	5445935	Ms
137-Ma-00	486624	5443244	Ms
138-Ma-00	486193	5439707	Gt
139-Map-00	486193	5439707	Gt
140-Ma-00	486382	5437087	Ms
141-Map-00	486382	5437087	Ms
142-Ma-00	483394	5433781	Ms
143-Map-00	483394	5433781	Ms
144-Ma-00	483109	5433709	Ms
145-Map-00	483109	5433709	Ms
146-Ma-00	481500	5433700	Ms
147-Ma-00	482307	5431539	Ms
148-Map-00	482307	5431539	Ms
149-Ma-00	483737	5429842	Mv
150-Map-00	483737	5429842	Mv
151-Ma-00	483879	5428808	Mv
152-Map-00	483879	5428808	Mv
153-Ma-00	483348	5435248	Ms
154-Ma-00	478879	5437583	Ms
160-Ma-00	478864	5433278	Ms
161-Map-00	478864	5433278	Ms
162-Ma-00	480133	5430688	Ms
163-Map-00	480133	5430688	Ms
179-Ma-00	472369	5424704	Um
180-Map-00	472369	5424704	Um
181-Ma-00	473224	5422414	Gt
182-Map-00	473224	5422414	Gt
183-Ma-00	472617	5420789	Gt
184-Map-00	472617	5420789	Gt
185-Ma-00	473369	5419780	Gt
186-Map-00	473369	5419780	Gt
187-Ma-00	472945	5415754	Gt
188-Map-00	472945	5415754	Gt
189-Ma-00	473498	5414992	Mv
190-Map-00	473498	5414992	Mv
191-Ma-00	474300	5415254	Mv
192-Map-00	474300	5415254	Mv

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
193-Ma-00	474181	5412442	Gt
194-Map-00	474181	5412442	Gt
195-Ma-00	473055	5409092	Gt
196-Map-00	473055	5409092	Gt
197-Ma-00	488314	5431530	Ms
198-Map-00	488314	5431530	Ms
199-Ma-00	488237	5431506	Ms
200-Map-00	488237	5431506	Ms
201-Ma-00	487809	5432377	Ms
202-Map-00	487809	5432377	Ms
208-Ma-00	490427	5422145	Gt
209-Map-00	490427	5422145	Gt
215-Ma-00	487884	5420935	Gt
216-Map-00	487884	5420935	Gt
222-Ma-00	478937	5414277	Mv
223-Map-00	478937	5414277	Mv
224-Ma-00	476465	5409414	Gt
225-Map-00	476465	5409414	Gt
226-Ma-00	476586	5409661	Gt
227-Map-00	476586	5409661	Gt
228-Ma-00	476984	5409484	Gt
229-Map-00	476984	5409484	Gt
230-Ma-00	478696	5408325	Mv
231-Map-00	478696	5408325	Mv
232-Ma-00	478998	5407997	Mv
233-Map-00	478998	5407997	Mv
239-Ma-00	499647	5432367	Ms
240-Map-00	499647	5432367	Ms
241-Ma-00	499715	5432507	Ms
242-Map-00	499715	5432507	Ms
248-Ma-00	498889	5428789	Gt
249-Map-00	498889	5428789	Gt
255-Ma-00	498692	5428353	Gt
256-Map-00	498692	5428353	Gt
257-Ma-00	498598	5426854	Mv
258-Map-00	498598	5426854	Mv
259-Ma-00	498027	5423501	Mv
260-Map-00	498027	5423501	Mv
261-Ma-00	499899	5423888	Gn
262-Map-00	499899	5423888	Gn
268-Ma-00	498446	5421108	Gn
269-Map-00	498446	5421108	Gn
270-Ma-00	497984	5421211	Mv
271-Map-00	497984	5421211	Mv

Appendix 1: Sample Site Locations (Continued)

Modern Alluvium Samples (Continued)

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
272-Ma-00	478785	5404226	Mv
273-Map-00	478785	5404226	Mv
299-Ma-00	469983	5409065	Gt
300-Map-00	469983	5409065	Gt
306-Ma-00	468201	5410479	Gt
307-Map-00	468201	5410479	Gt
308-Ma-00	481604	5401227	Gt
309-Map-00	481604	5401227	Gt
310-Ma-00	481114	5401412	Gt
311-Map-00	481114	5401412	Gt
312-Ma-00	480831	5401612	Gt
313-Map-00	480831	5401612	Gt
314-Ma-00	478648	5403597	Mv
315-Map-00	478648	5403597	Mv
316-Ma-00	477129	5404789	Mv
317-Map-00	477129	5404789	Mv
318-Ma-00	475894	5404979	Mv
319-Map-00	475894	5404979	Mv
320-Ma-00	474901	5404616	Mv
321-Map-00	474901	5404616	Mv
339-Ma-00	491461	5402099	Gt
340-Map-00	491461	5402099	Gt
341-Ma-00	498473	5410699	Gt
342-Map-00	498473	5410699	Gt
343-Ma-00	495759	5409333	Gt
344-Map-00	495759	5409333	Gt
345-Ma-00	493601	5411977	Mv
346-Map-00	493601	5411977	Mv
357-Ma-00	469332	5414624	Gt
358-Map-00	469332	5414624	Gt
359-Ma-00	469347	5414327	Gt
360-Map-00	469347	5414327	Gt
361-Ma-00	468652	5414432	Gt
362-Map-00	468652	5414432	Gt
363-Ma-00	468495	5413779	Gt
364-Map-00	468495	5413779	Gt
365-Ma-00	468475	5412885	Gt
366-Map-00	468475	5412885	Gt
367-Ma-00	470864	5402730	Um (Gab)
368-Map-00	470864	5402730	Um (Gab)
374-Ma-00	472573	5401159	Fm
375-Map-00	472573	5401159	Fm
376-Ma-00	499788	5406440	Gt
377-Map-00	499788	5406440	Gt

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
378-Ma-00	498940	5403368	Gt
379-Map-00	498940	5403368	Gt
380-Ma-00	498188	5404166	Gt
381-Map-00	498188	5404166	Gt
382-Ma-00	497924	5404282	Gt
383-Map-00	497924	5404282	Gt
384-Ma-00	497291	5403852	Gt
385-Map-00	497291	5403852	Gt
386-Ma-00	496573	5403394	Gt
387-Map-00	496573	5403394	Gt
388-Ma-00	494085	5402273	Gt
389-Map-00	494085	5402273	Gt
390-Ma-00	489562	5401756	Gt
391-Map-00	489562	5401756	Gt
392-Ma-00	483821	5400313	Gt
393-Map-00	483821	5400313	Gt
394-Ma-00	470933	5412839	Mv
395-Map-00	470933	5412839	Mv
396-Ma-00	471957	5411839	Gt
397-Map-00	471957	5411839	Gt
398-Ma-00	467452	5409722	Gt
399-Map-00	467452	5409722	Gt
400-Ma-00	471984	5418150	Gt
401-Map-00	471984	5418150	Gt
402-Ma-00	474929	5413823	Mv
403-Map-00	474929	5413823	Mv
404-Ma-00	473725	5412001	Gt
405-Map-00	473725	5412001	Gt
406-Ma-00	473057	5413322	Gt
407-Map-00	473057	5413322	Gt
408-Ma-00	474739	5410100	Gt
409-Map-00	474739	5410100	Gt
410-Ma-00	490220	5409496	Mv
411-Map-00	490220	5409496	Mv
412-Ma-00	492409	5411666	Mv
413-Map-00	492409	5411666	Mv
414-Ma-00	492697	5411855	Mv
415-Map-00	492697	5411855	Mv
416-Ma-00	493605	5413381	Mv
417-Map-00	493605	5413381	Mv
418-Ma-00	482416	5404038	Mv
419-Map-00	482416	5404038	Mv
426-Ma-00	488875	5422642	Gt
427-Map-00	488875	5422642	Gt

Appendix 1: Sample Site Locations (Continued)

Modern Alluvium Samples (Continued)

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
428-Ma-00	488372	5422429	Gt
429-Map-00	488372	5422429	Gt
440-Ma-00	493067	5426747	Mv
441-Map-00	493067	5426747	Mv
442-Ma-00	493124	5425624	Gt
443-Map-00	493124	5425624	Gt
1000-Ma-00	484851	5435929	Ms
1001-Map-00	484851	5435929	Ms
1012-Ma-00	499453	5450913	Ms
1013-Map-00	499453	5450913	Ms
1014-Ma-00	499725	5450931	Ms
1015-Map-00	499725	5450931	Ms
1021-Ma-00	498106	5448464	Gn
1022-Map-00	498106	5448464	Gn
1028-Ma-00	499097	5444941	Gn
1029-Map-00	499097	5444941	Gn
1030-Ma-00	499370	5445711	Ms
1031-Map-00	499370	5445711	Ms
1032-Ma-00	498699	5445841	Ms
1033-Map-00	498699	5445841	Ms
1034-Ma-00	499818	5446944	Ms
1035-Map-00	499818	5446944	Ms
1036-Ma-00	499837	5448829	Gn
1037-Map-00	499837	5448829	Gn
1038-Ma-00	485863	5446484	Gn
1039-Map-00	485863	5446484	Gn
1040-Ma-00	481352	5449276	Ms
1041-Map-00	481352	5449276	Ms
1042-Ma-00	481669	5449276	Ms
1043-Map-00	481669	5449276	Ms
1044-Ma-00	482580	5449589	Ms
1045-Map-00	482580	5449589	Ms
1046-Ma-00	483752	5447355	Gn
1047-Map-00	483752	5447355	Gn
1053-Ma-00	486336	5446639	Ms
1054-Map-00	486336	5446639	Ms
1055-Ma-00	486304	5449275	Ms
1056-Map-00	486304	5449275	Ms
1057-Ma-00	485734	5449319	Ms
1058-Map-00	485734	5449319	Ms
1059-Ma-00	486083	5450973	Ms
1060-Map-00	486083	5450973	Ms
1072-Ma-00	484490	5452491	Ms
1073-Map-00	484490	5452491	Ms

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
1074-Ma-00	479182	5452339	Ms
1075-Map-00	479182	5452339	Ms
1076-Ma-00	479377	5452514	Ms
1077-Map-00	479377	5452514	Ms
1083-Ma-00	492856	5423438	Um
1084-Map-00	492856	5423438	Um
1085-Ma-00	493715	5421599	Gt
1086-Map-00	493715	5421599	Gt
1092-Ma-00	495338	5420358	Gt
1093-Map-00	495338	5420358	Gt
1094-Ma-00	475751	5450847	Ms
1095-Map-00	475751	5450847	Ms
1101-Ma-00	476386	5450890	Ms
1102-Map-00	476386	5450890	Ms
1103-Ma-00	477444	5451937	Ms
1104-Map-00	477444	5451937	Ms
1105-Ma-00	478426	5454074	Ms
1106-Map-00	478426	5454074	Ms
1107-Ma-00	478431	5454790	Ms
1108-Map-00	478431	5454790	Ms
1109-Ma-00	480926	5454577	Ms
1110-Map-00	480926	5454577	Ms
1111-Ma-00	484570	5454877	Ms
1112-Map-00	484570	5454877	Ms
1113-Ma-00	487676	5454025	Ms
1114-Map-00	487676	5454025	Ms
1120-Ma-00	489031	5453256	Ms
1121-Map-00	489031	5453256	Ms
1122-Ma-00	487931	5450988	Ms
1123-Map-00	487931	5450988	Ms
1129-Ma-00	489246	5450159	Ms
1130-Map-00	489246	5450159	Ms
1131-Ma-00	471451	5445664	Ms
1132-Map-00	471451	5445664	Ms
1133-Ma-00	471033	5445076	Ms
1134-Map-00	471033	5445076	Ms
1135-Ma-00	470264	5445285	Ms
1136-Map-00	470264	5445285	Ms
1142-Ma-00	473700	5446739	Ms
1143-Map-00	473700	5446739	Ms
1144-Ma-00	474915	5446805	Ms
1145-Map-00	474915	5446805	Ms
1146-Ma-00	473929	5449655	Ms
1147-Map-00	473929	5449655	Ms

Appendix 1: Sample Site Locations (Continued)

Modern Alluvium Samples (Continued)

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
1153-Ma-00	475735	5447544	Ms
1154-Map-00	475735	5447544	Ms
1155-Ma-00	496229	5418229	Mv
1156-Map-00	496229	5418229	Mv
1157-Ma-00	495628	5417857	Mv
1158-Map-00	495628	5417857	Mv
1159-Ma-00	494846	5416121	Mv
1160-Map-00	494846	5416121	Mv
1161-Ma-00	494707	5415289	Mv
1162-Map-00	494707	5415289	Mv
1163-Ma-00	494357	5415288	Mv
1164-Map-00	494357	5415288	Mv
1165-Ma-00	493473	5413831	Mv
1166-Map-00	493473	5413831	Mv
1172-Ma-00	498586	5417681	Fm
1173-Map-00	498586	5417681	Fm
1179-Ma-00	498156	5417291	Mv
1180-Map-00	498156	5417291	Mv
1181-Ma-00	495944	5413853	Mv
1182-Map-00	495944	5413853	Mv
1188-Ma-00	496624	5414461	Mv
1189-Map-00	496624	5414461	Mv
1190-Ma-00	497373	5414694	Mv
1191-Map-00	497373	5414694	Mv
1192-Ma-00	487864	5405891	Mv
1193-Map-00	487864	5405891	Mv
1194-Ma-00	487842	5408377	Mv
1195-Map-00	487842	5408377	Mv
1201-Ma-00	487635	5407886	Mv
1202-Map-00	487635	5407886	Mv
1203-Ma-00	485784	5406654	Mv
1204-Map-00	485784	5406654	Mv
1205-Ma-00	485293	5406964	Mv
1206-Map-00	485293	5406964	Mv
1207-Ma-00	484955	5406824	Mv
1208-Map-00	484955	5406824	Mv
1214-Ma-00	480869	5408425	Mv
1215-Map-00	480869	5408425	Mv
1216-Ma-00	480869	5409592	Mv
1217-Map-00	480869	5409592	Mv
1218-Ma-00	480244	5407543	Mv
1219-Map-00	480244	5407543	Mv
1225-Ma-00	464341	5401257	Fm
1226-Map-00	464341	5401257	Fm

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
1229-Ma-00	466850	5400818	Fm
1230-Map-00	466850	5400818	Fm
1234-Ma-00	466987	5403152	Fm
1235-Map-00	466987	5403152	Fm
1291-Ma-00	465700	5453200	Ms
1292-Map-00	465700	5453200	Ms
1293-Ma-00	464687	5449967	Ms
1294-Map-00	464687	5449967	Ms
1295-Ma-00	464609	5443991	Ms
1295-Map-00	464609	5443991	Ms
1297-Ma-00	467477	5445381	Ms
1298-Map-00	467477	5445381	Ms
1299-Ma-00	471837	5447588	Ms
1300-Map-00	471837	5447588	Ms
1301-Ma-00	472042	5441121	Ms
1302-Map-00	472042	5441121	Ms
1303-Ma-00	473875	5440170	Ms
1304-Map-00	473875	5440170	Ms
1305-Ma-00	465835	5439184	Ms
1306-Map-00	465835	5439184	Ms
1307-Ma-00	465306	5435007	Gn
1308-Map-00	465306	5435007	Gn
1309-Ma-00	466913	5431850	Ms
1310-Map-00	466913	5431850	Ms
1311-Ma-00	472384	5433989	Ms
1312-Map-00	472384	5433989	Ms
1313-Ma-00	465146	5429858	Ms
1314-Map-00	465146	5429858	Ms
1315-Ma-00	465452	5425095	Gt
1316-Map-00	465452	5425095	Gt
1317-Ma-00	463409	5418772	Gt
1318-Map-00	463409	5418772	Gt
1319-Ma-00	474671	5428720	Gt
1320-Map-00	474671	5428720	Gt
1321-Ma-00	481400	5428300	Mv
1322-Map-00	481400	5428300	Mv
1323-Ma-00	478946	5427213	Gt
1324-Map-00	478946	5427213	Gt
1325-Ma-00	480197	5423539	Gt
1326-Map-00	480197	5423539	Gt
1327-Ma-00	481915	5417579	Gt
1328-Map-00	481915	5417579	Gt
1329-Ma-00	485579	5414207	Mv
1330-Map-00	485579	5414207	Mv

Appendix 1: Sample Site Locations (Continued)

Till Samples

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
11-Tp-00	483601	5442135	Ms
12-Tm-00	483601	5442135	Ms
32-Tp-00	494850	5448000	Gn
33-Tm-00	494850	5448000	Gn
51-Tp-00	495804	5442936	Ms
52-Tm-00	495804	5442936	Ms
72-Tp-00	493530	5454299	Ms
73-Tm-00	493530	5454299	Ms
77-Tp-00	494737	5435257	Ms
78-Tm-00	494737	5435257	Ms
82-Tp-00	494798	5434715	Ms
83-Tm-00	494798	5434715	Ms
87-Tp-00	492668	5426882	Mv
88-Tm-00	492668	5426882	Mv
116-Tp-00	486233	5429330	Mv
117-Tm-00	486233	5429330	Mv
158-Tp-00	479053	5437975	Ms
159-Tm-00	479053	5437975	Ms
167-Tp-00	478570	5433867	Ms
168-Tm-00	478570	5433867	Ms
172-Tp-00	479541	5442098	Ms
173-Tm-00	479541	5442098	Ms
177-Tp-00	476282	5438147	Ms
178-Tm-00	476282	5438147	Ms
206-Tp-00	487195	5433331	Ms
207-Tm-00	487195	5433331	Ms
213-Tp-00	490133	5422331	Gt
214-Tm-00	490133	5422331	Gt
220-Tp-00	484988	5420771	Gt
221-Tm-00	484988	5420771	Gt
237-Tp-00	478680	5407209	Gt
238-Tm-00	478680	5407209	Gt
246-Tp-00	499747	5432466	Ms
247-Tm-00	499747	5432466	Ms
253-Tp-00	498367	5427658	Ms
254-Tm-00	498367	5427658	Ms
266-Tp-00	499489	5423446	Gn
267-Tm-00	499489	5423446	Gn
277-Tp-00	474197	5412060	Gt
278-Tm-00	474197	5412060	Gt
282-Tp-00	472848	5418069	Gt
283-Tm-00	472848	5418069	Gt
287-Tp-00	473301	5408515	Gt
288-Tm-00	473301	5408515	Gt

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
292-Tp-00	499575	5410531	Mv
293-Tm-00	499575	5410531	Mv
297-Tp-00	473228	5424462	Um
298-Tm-00	473228	5424462	Um
304-Tp-00	469983	5409065	Gt
305-Tm-00	469983	5409065	Gt
350-Tp-00	492504	5409192	Mv
351-Tm-00	492504	5409192	Mv
355-Tp-00	471641	5409544	Gt
356-Tm-00	471641	5409544	Gt
372-Tp-00	470775	5402459	Fm
373-Tm-00	470775	5402459	Fm
433-Tp-00	484402	5430696	Ms
434-Tm-00	484402	5430696	Ms
438-Tp-00	488695	5428153	Mv
439-Tm-00	488695	5428153	Mv
1005-Tp-00	484537	5436937	Ms
1006-Tm-00	484537	5436937	Ms
1010-Tp-00	499802	5452292	Ms
1011-Tm-00	499802	5452292	Ms
1019-Tp-00	498531	5448365	Gn
1020-Tm-00	498531	5448365	Gn
1026-Tp-00	497791	5443425	Ms
1027-Tm-00	497791	5443425	Ms
1051-Tp-00	484016	5447109	Gn
1052-Tm-00	484016	5447109	Gn
1065-Tp-00	479556	5447053	Ms
1066-Tm-00	479556	5447053	Ms
1070-Tp-00	483325	5451473	Ms
1071-Tm-00	483325	5451473	Ms
1081-Tp-00	480044	5453557	Ms
1082-Tm-00	480044	5453557	Ms
1090-Tp-00	494172	5421125	Gt
1091-Tm-00	494172	5421125	Gt
1099-Tp-00	475720	5450847	Ms
1100-Tm-00	475720	5450847	Ms
1118-Tp-00	488634	5453728	Ms
1119-Tm-00	488634	5453728	Ms
1127-Tp-00	488668	5449676	Ms
1128-Tm-00	488668	5449676	Ms
1140-Tp-00	470560	5445620	Ms
1141-Tm-00	470560	5445620	Ms
1151-Tp-00	474239	5446841	Ms
1152-Tm-00	474239	5446841	Ms

Appendix 1: Sample Site Locations (Continued)

Till Samples (Continued)

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
1177-Tp-00	498183	5417268	Fm
1178-Tm-00	498183	5417268	Fm
1186-Tp-00	496271	5413982	Mv
1187-Tm-00	496271	5413982	Mv
1199-Tp-00	487606	5407888	Mv
1200-Tm-00	487606	5407888	Mv
1212-Tp-00	484966	5406754	Mv
1213-Tm-00	484966	5406754	Mv
1223-Tp-00	480040	5401911	Fm
1224-Tm-00	480040	5401911	Fm

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
1239-Tp-00	466236	5403996	Fm
1240-Tm-00	466236	5403996	Fm
1244-Tp-00	464154	5406430	Gt
1245-Tm-00	464154	5406430	Gt
1246-Tp-00	472101	5424760	Gt
1251-Tp-00	472456	5421828	Gt
1266-Tp-00	473379	5415409	Gt
1270-Tp-00	472194	5416899	Gt
1272-Tp-00	472194	5416899	Gt
1281-Tp-00	473932	5412189	Gt

Orientation Surveys

Cameco Gold Inc., Empress Gold Property

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
449-Ma-00	502536	5412357	Mv
451-Ma-00	502559	5412330	Mv
457-Tm-00	502368	5412325	Mv
458-Ma-00	502410	5412397	Mv

Hays Lake Gravel Pit

Sample Number/Material	U.T.M.'s Easting	Northing	Associated Bedrock
420-Gl-00	484069	5404743	Gt
422-Gl-00	483994	5404708	Gt
424-Gl-00	483974	5404698	Gt

APPENDIX 2: Summary Counts of Picked and Estimated Numbers of Grains

Kimberlite Indicator Minerals

Summary of Abbreviations

CR:	Chromite
DC:	Cr-Diopside
Est.:	Estimate
FO:	Forsterite
GL:	Glaciolacustrine
GO:	Eclogite Garnet
GP:	Cr-pyrope Garnet
IM:	Ilmenite
KIMs:	Kimberlite Indicator Minerals
LDC:	Low-Cr diopside
Ma:	Modern Alluvium
NS:	Not Sufficient Sample
Pic.:	Picked
Tm:	Till Sample

Appendix 2

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm							Total KIMs
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
1-Ma-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
2-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
4-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-Ma-00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
23-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	6	0	2	1	0	0	0	8	15	0	23
25-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
27-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
36-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38-Ma-00	0	0	0	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
40-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	1	1	1	1	0	2
44-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
55-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0	0	1
57-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	1	1	0	2
59-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1
63-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
65-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
67-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	15	1	0	0	0	0	4	15	1	1	0	17
89-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
91-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
95-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
101-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	2	2	0	3
105-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
118-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
127-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
129-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
131-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
134-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135-Ma-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
136-Ma-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
137-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								Total KIMs
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
153-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
154-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
162-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	3	3	0	6
179-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
183-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
187-Ma-00	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
189-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
191-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
195-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
197-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
199-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
215-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
222-Ma-00	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
224-Ma-00	0	1	1	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
226-Ma-00	0	0	0	9	9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
228-Ma-00	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
232-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239-Ma-00	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
241-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
248-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
255-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
257-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
259-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR		FO		
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
261-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
268-Ma-00	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
270-Ma-00	NS	0	0	1	1	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
272-Ma-00	0	1	1	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
299-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
306-Ma-00	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
308-Ma-00	0	5	5	40	40	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
310-Ma-00	1	7	7	13	13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
312-Ma-00	0	7	7	30	150	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	6	6	3	9
314-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
316-Ma-00	0	2	2	14	14	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	18	1
318-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
320-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
339-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
341-Ma-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
343-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
345-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	3	3	0	0	0	1
357-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
359-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
361-Ma-00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
363-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
367-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
374-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
376-Ma-00	0	0	0	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
378-Ma-00	NS	0	0	9	9	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
380-Ma-00	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
382-Ma-00	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
384-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
386-Ma-00	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0

Appendix (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
388-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
390-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
392-Ma-00	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
394-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
396-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
398-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
402-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
404-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
406-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
408-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
410-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
412-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
414-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
416-Ma-00	0	2	2	8	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	2	1
418-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
426-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
428-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
440-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
442-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1000-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1012-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	3	0	0	0	0	0	0	1	1	0	6
1014-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1021-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1028-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1030-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1032-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1034-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	1	1	0	0	0	0	0	0	1
1036-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1038-Ma-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
1040-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	4	4	0	4
1042-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
1044-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	0	3
1046-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1053-Ma-00	0	NS	NS	0	0	0	0	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
1055-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
1057-Ma-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
1059-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1072-Ma-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
1074-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1076-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	3
1083-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1085-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1092-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1094-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1
1101-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1103-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1105-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1107-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
1109-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1111-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	1	0	0	0	1
1113-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1120-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1122-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1129-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1131-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1133-Ma-00	0	0	0	7	7	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1135-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1142-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	2
1144-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
1146-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1153-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1155-Ma-00	NS	0	0	0	0	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1157-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1	1	0	2
1159-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1161-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1163-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1165-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1172-Ma-00	0	1	1	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1179-Ma-00	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1181-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1188-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1190-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1192-Ma-00	NS	0	0	4	4	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1194-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1201-Ma-00	0	10	30	15	450	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6	6	0	7
1203-Ma-00	0	3	3	18	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1205-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	3
1207-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1214-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1216-Ma-00	0	1	1	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1218-Ma-00	0	0	0	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1225-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1229-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1234-Ma-00	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1291-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1293-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1295-Ma-00	0	1	1	7	7	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	5	5	2	2	0	6
1297-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1299-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
1301-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1305-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1307-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1309-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1311-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1313-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
1315-Ma-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1317-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1319-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1321-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1323-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1325-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1327-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1329-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	5	5	0	6
73-Tm-00	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
78-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83-Tm-00	0	0	0	12	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
88-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	2	2	2	0	3
117-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
207-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
214-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
221-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
238-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
247-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
254-Tm-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
267-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
277-Tm-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
283-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
28[illegible]Tm-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
293-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
298-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
356-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
373-Tm-00	NS	NS	NS	0	0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	0	0	0	0	0	0	0	0	0
434-Tm-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
439-Tm-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
448-Tm-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1006-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1011-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1020-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1027-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1052-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1066-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1071-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1082-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1091-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1
1119-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
1128-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1141-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	1
1152-Tm-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1

Appendix 2 (Continued)

Overburden Drilling Management Limited Kimberlite Indicator Mineral Counts (Continued)

Sample Number	Pseudo KIMs					KIM Count (FO species not rigorously picked; excluded from total)																				Total KIMs
	1.0-2.0 mm	0.5-1.0 mm		0.25-0.5 mm		1.0 to 2.0 mm						0.5 to 1.0 mm						0.25 to 0.5 mm								
	LDC	LDC		LDC		GP	GO	DC	IM	CR	FO	GP	GO	DC	IM	CR	FO	GP	GO	DC	IM		CR		FO	
	Pic.	Pic.	Est.	Pic.	Est.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Pic.	Est.	Pic.	Est.	Pic.	
1178-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	0	1
1187-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200-Tm-00	2	10	10	21	40	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	8	8	0	9
1213-Tm-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1224-Tm-00	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1240-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1245-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Orientation Surveys																										
Cameco Gold Inc. Empress Gold Property																										
449-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
451-Ma-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
457-Tm-00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
458-Ma-00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hays Lake Gravel Pit																										
420-Gl-00	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
422-Gl-00	0	1	1	15	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
424-Gl-00	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

APPENDIX 2: Summary Counts of Picked and Estimated Number of Grains

Metamorphosed or Magmatic Massive Sulphide Indicator Minerals

Summary List of Abbreviations

%: Percentage
An: Anthophyllite
Ba: Barite
Ch: Chalcopyrite
Co: Corundum
Cr: Chromite
Cru: Ruby corundum
Est: Estimated number of grains
Fl: Fluorite
Gah: Gahnite
Gth: Goethite
Gr: Grossular
Ky: Kyanite
Ldc: Low-Cr diopside
Lo: Loellingite
Ma: Modern alluvium
Me: Mn-epidote
Mo: Molybdenite
Ms: Manganese spinel
Ng: Native gold
Ol: Olivine
Or: Orthopyroxene
Pic: Picked
Py: Pyrite
Rr: Red rutile
Sa: Sappharine
SaCor: Sappharine Corundum
Si: Sillimanite
Sph: Sphalerite
Sps: Spessartine
Sp: Spinel
St: Staurolite
Tm: Till
Tr: Trace

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	An		Ba		Ch		Co		Cr		Cru		Fl		Gah	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1-Ma-00	485700	5444139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-Ma-00	486540	5441872	0	0	0	0	1	1	0	0	2	2	0	0	0	0	0	0
4-Ma-00	486751	5441745	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6-Ma-00	486066	5440773	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
13-Ma-00	485928	5439102	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
15-Ma-00	485816	5438599	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
17-Ma-00	485265	5438141	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19-Ma-00	484667	5437464	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Ma-00	495901	5449382	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
23-Ma-00	495962	5449719	0	0	0	0	0	0	0	0	14	20	0	0	0	0	1	1
25-Ma-00	494846	5449755	0	0	0	0	0	0	0	0	3	3	0	0	0	0	0	0
27-Ma-00	494850	5449347	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
34-Ma-00	494902	5446841	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
36-Ma-00	494835	5450668	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
38-Ma-00	496484	5443541	0	0	0	0	2	2	0	0	1	1	1	1	0	0	0	0
40-Ma-00	495625	5442246	0	0	0	0	7	7	0	0	0	0	0	0	0	0	0	0
42-Ma-00	496894	5442737	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0
44-Ma-00	495466	5444313	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
46-Ma-00	495725	5443625	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
53-Ma-00	495122	5441915	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0
55-Ma-00	495430	5438252	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
57-Ma-00	493501	5454322	0	0	0	0	5	5	0	0	1	1	0	0	0	0	0	0
59-Ma-00	495184	5436529	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
61-Ma-00	495540	5433351	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
63-Ma-00	494340	5433388	0	0	0	0	2	2	0	0	1	1	0	0	0	0	0	0
65-Ma-00	494736	5430449	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
67-Ma-00	493019	5428052	0	0	0	0	5	5	0	0	2	2	0	0	0	0	0	0
89-Ma-00	493267	5440035	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0
91-Ma-00	494351	5434194	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93-Ma-00	494162	5434251	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95-Ma-00	494817	5432414	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97-Ma-00	495356	5430966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99-Ma-00	494965	5429931	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101-Ma-00	494861	5429575	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103-Ma-00	494562	5429170	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
105-Ma-00	486490	5429671	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107-Ma-00	485843	5429820	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109-Ma-00	485731	5429732	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
111-Ma-00	486204	5429222	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
118-Ma-00	486833	5428950	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
119-Ma-00	489022	5426885	0	0	0	0	13	13	0	0	0	0	0	0	0	0	0	0
121-Ma-00	489426	5426759	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123-Ma-00	490594	5425549	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125-Ma-00	491055	5425848	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs															
Number	Easting	Northing	Gth (%)		Gr		Ky (%)		Ldc		Lo		Me		Mo		Ms	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1-Ma-00	485700	5444139	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2-Ma-00	486540	5441872	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
4-Ma-00	486751	5441745	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0
6-Ma-00	486066	5440773	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13-Ma-00	485928	5439102	Tr	0.25	0	0	0	0	1	1	0	0	0	0	0	0	0	0
15-Ma-00	485816	5438599	Tr	0.25	0	0	0	0	0	0	0	0	0	0	1	1	0	0
17-Ma-00	485265	5438141	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
19-Ma-00	484667	5437464	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21-Ma-00	495901	5449382	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0	0	0
23-Ma-00	495962	5449719	0	0	1	1	0	0	1	1	0	0	0	0	0	0	0	0
25-Ma-00	494846	5449755	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
27-Ma-00	494850	5449347	Tr	0.25	0	0	0	0	0	0	0	0	1	1	0	0	0	0
34-Ma-00	494902	5446841	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
36-Ma-00	494835	5450668	Tr	0.25	0	0	0	0	1	1	0	0	0	0	0	0	0	0
38-Ma-00	496484	5443541	Tr	0.25	0	0	0.5	0.5	8	8	0	0	0	0	0	0	0	0
40-Ma-00	495625	5442246	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
42-Ma-00	496894	5442737	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
44-Ma-00	495466	5444313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
46-Ma-00	495725	5443625	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
53-Ma-00	495122	5441915	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
55-Ma-00	495430	5438252	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
57-Ma-00	493501	5454322	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
59-Ma-00	495184	5436529	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
61-Ma-00	495540	5433351	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
63-Ma-00	494340	5433388	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
65-Ma-00	494736	5430449	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
67-Ma-00	493019	5428052	Tr	0.25	0	0	0	0	2	2	0	0	1	1	0	0	0	0
89-Ma-00	493267	5440035	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	2	2	0	0
91-Ma-00	494351	5434194	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
93-Ma-00	494162	5434251	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
95-Ma-00	494817	5432414	1	1	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
97-Ma-00	495356	5430966	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
99-Ma-00	494965	5429931	0	0	3	3	Tr	0.25	0	0	0	0	0	0	0	0	0	0
101-Ma-00	494861	5429575	0	0	0	0	Tr	0.25	0	0	0	0	1	1	0	0	0	0
103-Ma-00	494562	5429170	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
105-Ma-00	486490	5429671	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107-Ma-00	485843	5429820	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
109-Ma-00	485731	5429732	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
111-Ma-00	486204	5429222	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
118-Ma-00	486833	5428950	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
119-Ma-00	489022	5426885	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
121-Ma-00	489426	5426759	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
123-Ma-00	490594	5425549	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125-Ma-00	491055	5425848	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs													
Number	Easting	Northing	Ng		Ol		Or	(%)	Py		Rr		Sa		SaCor	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1-Ma-00	485700	5444139	0	0	0	0	30	0	0	0	0	0	0	0	0	0
2-Ma-00	486540	5441872	0	0	0	0	0.25	0	0	30	0	0	0	0	0	0
4-Ma-00	486751	5441745	0	0	0	0	0	0	0	20	0	0	0	0	0	0
6-Ma-00	486066	5440773	0	0	0	0	0	0	0	250	0	0	0	0	0	0
13-Ma-00	485928	5439102	0	0	0	0	Tr	0.25	0	200	0	0	0	0	0	0
15-Ma-00	485816	5438599	0	0	0	0	0	0	0	100	0	0	0	0	0	0
17-Ma-00	485265	5438141	0	0	0	0	Tr	0.25	10	10	1	1	0	0	0	0
19-Ma-00	484667	5437464	0	0	0	0	0	0	1	1	0	0	0	0	0	0
21-Ma-00	495901	5449382	0	0	0	0	Tr	0.25	0	25	0	0	0	0	0	0
23-Ma-00	495962	5449719	0	0	0	0	0	0	0	10	1	1	0	0	0	0
25-Ma-00	494846	5449755	0	0	0	0	0	0	0	30	0	0	0	0	0	0
27-Ma-00	494850	5449347	0	0	0	0	0	0	2	2	0	0	0	0	0	0
34-Ma-00	494902	5446841	0	0	0	0	Tr	0.25	0	25	1	1	0	0	0	0
36-Ma-00	494835	5450668	0	0	0	0	2	2	3	3	1	1	0	0	0	0
38-Ma-00	496484	5443541	1	1	0	0	Tr	0.25	2	2	0	0	0	0	0	0
40-Ma-00	495625	5442246	0	0	0	0	Tr	0.25	0	30	0	0	0	0	0	0
42-Ma-00	496894	5442737	0	0	0	0	0	0	10	10	1	1	0	0	0	0
44-Ma-00	495466	5444313	0	0	0	0	30	30	0	30	0	0	0	0	0	0
46-Ma-00	495725	5443625	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0
53-Ma-00	495122	5441915	0	0	0	0	5	5	0	0	2	2	0	0	0	0
55-Ma-00	495430	5438252	0	0	0	0	2	2	0	15	4	0	0	0	0	0
57-Ma-00	493501	5454322	0	0	0	0	1	1	0	15	0	0	0	0	0	0
59-Ma-00	495184	5436529	0	0	0	0	Tr	0.25	4	4	0	0	0	0	0	0
61-Ma-00	495540	5433351	0	0	0	0	Tr	0.25	0	20	0	0	0	0	0	0
63-Ma-00	494340	5433388	0	0	0	0	5	5	0	150	1	1	0	0	0	0
65-Ma-00	494736	5430449	0	0	0	0	Tr	0.25	5	5	1	1	0	0	0	0
67-Ma-00	493019	5428052	0	0	0	0	0	0	0	20	5	5	0	0	0	0
89-Ma-00	493267	5440035	0	0	0	0	Tr	0.25	0	30	0	0	0	0	0	0
91-Ma-00	494351	5434194	0	0	0	0	Tr	0.25	0	20	0	0	0	0	0	0
93-Ma-00	494162	5434251	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0
95-Ma-00	494817	5432414	0	0	0	0	1	1	0	0	0	0	0	0	0	0
97-Ma-00	495356	5430966	0	0	0	0	0	0	0	30	0	0	0	0	0	0
99-Ma-00	494965	5429931	0	0	0	0	2	2	0	20	2	2	0	0	0	0
101-Ma-00	494861	5429575	0	0	0	0	Tr	0.25	8	8	0	0	0	0	0	0
103-Ma-00	494562	5429170	0	0	0	0	1	1	0	30	2	2	0	0	0	0
105-Ma-00	486490	5429671	0	0	0	0	20	20	2	2	0	0	0	0	0	0
107-Ma-00	485843	5429820	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
109-Ma-00	485731	5429732	0	0	0	0	1	1	4	4	0	0	0	0	0	0
111-Ma-00	486204	5429222	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
118-Ma-00	486833	5428950	0	0	0	0	3	3	8	8	0	0	0	0	0	0
119-Ma-00	489022	5426885	0	0	0	0	Tr	0.25	0	1200	0	0	0	0	0	0
121-Ma-00	489426	5426759	0	0	0	0	0	0	0	20	0	0	0	0	0	0
123-Ma-00	490594	5425549	0	0	0	0	Tr	0.25	0	25	0	0	0	0	0	0
125-Ma-00	491055	5425848	1	1	0	0	Tr	0.25	0	20	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs									
	Easting	Northing	Si (%)		Sph		Sps (%)		Sp		St (%)	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1-Ma-00	485700	5444139	0	0	0	0	0	0	0	0	0	0
2-Ma-00	486540	5441872	0	0	0	0	0	0	0	0	Tr	0.25
4-Ma-00	486751	5441745	0	0	0	0	0	0	0	0	Tr	0.25
6-Ma-00	486066	5440773	Tr	0.25	0	0	0	0	0	0	Tr	0.25
13-Ma-00	485928	5439102	Tr	0.25	0	0	0	0	0	0	Tr	0.25
15-Ma-00	485816	5438599	0	0	0	0	0	0	0	0	0	0
17-Ma-00	485265	5438141	Tr	0.25	0	0	0	0	0	0	Tr	0.25
19-Ma-00	484667	5437464	0	0	0	0	0	0	0	0	0	0
21-Ma-00	495901	5449382	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
23-Ma-00	495962	5449719	0	0	0	0	0	0	2	2	Tr	0.25
25-Ma-00	494846	5449755	0	0	0	0	0	0	0	0	Tr	0.25
27-Ma-00	494850	5449347	0	0	0	0	0	0	0	0	1	1
34-Ma-00	494902	5446841	0	0	0	0	0	0	0	0	Tr	0.25
36-Ma-00	494835	5450668	Tr	0.25	0	0	Tr	0.25	1	1	1	1
38-Ma-00	496484	5443541	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
40-Ma-00	495625	5442246	0	0	0	0	0	0	0	0	Tr	0.25
42-Ma-00	496894	5442737	0	0	0	0	0	0	0	0	Tr	0.25
44-Ma-00	495466	5444313	0	0	0	0	0	0	0	0	Tr	0.25
46-Ma-00	495725	5443625	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
53-Ma-00	495122	5441915	0	0	0	0	0	0	0	0	Tr	0.25
55-Ma-00	495430	5438252	Tr	0.25	0	0	0	0	0	0	Tr	0.25
57-Ma-00	493501	5454322	0	0	0	0	0	0	0	1	2	2
59-Ma-00	495184	5436529	0	0	0	0	0	0	0	0	Tr	0.25
61-Ma-00	495540	5433351	Tr	0.25	0	0	0	0	0	0	Tr	0.25
63-Ma-00	494340	5433388	0	0	0	0	0	0	1	1	Tr	0.25
65-Ma-00	494736	5430449	0	0	0	0	0	0	0	0	Tr	0.25
67-Ma-00	493019	5428052	Tr	0.25	0	0	0	0	0	0	Tr	0.25
89-Ma-00	493267	5440035	0	0	0	0	Tr	0.25	0	0	Tr	0.25
91-Ma-00	494351	5434194	Tr	0.25	0	0	0	0	0	0	Tr	0.25
93-Ma-00	494162	5434251	Tr	0.25	0	0	0	0	0	0	Tr	0.25
95-Ma-00	494817	5432414	0	0	0	0	Tr	0.25	0	0	Tr	0.25
97-Ma-00	495356	5430966	0	0	0	0	0	0	0	0	0	0
99-Ma-00	494965	5429931	0	0	0	0	0	0	0	0	Tr	0.25
101-Ma-00	494861	5429575	0	0	0	0	Tr	0.25	0	0	Tr	0.25
103-Ma-00	494562	5429170	0	0	0	0	0	0	1	1	0	0
105-Ma-00	486490	5429671	0	0	0	0	0	0	0	0	0	0
107-Ma-00	485843	5429820	0	0	0	0	0	0	0	0	Tr	0.25
109-Ma-00	485731	5429732	0	0	0	0	0	0	0	0	Tr	0.25
111-Ma-00	486204	5429222	Tr	0.25	0	0	0	0	0	0	Tr	0.25
118-Ma-00	486833	5428950	0	0	0	0	0	0	0	0	0	0
119-Ma-00	489022	5426885	0	0	0	0	0	0	0	0	Tr	0.25
121-Ma-00	489426	5426759	0	0	0	0	0	0	0	0	Tr	0.25
123-Ma-00	490594	5425549	0	0	0	0	0	0	0	0	Tr	0.25
125-Ma-00	491055	5425848	0	0	0	0	0	0	0	0	Tr	0.25

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	An		Ba		Ch		Co		Cr		Cru		Fl		Gah	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
127-Ma-00	491540	5424944	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
129-Ma-00	492251	5424383	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
131-Ma-00	497451	5410447	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
132-Ma-00	495381	5409098	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
134-Ma-00	494528	5408164	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135-Ma-00	494114	5407638	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
136-Ma-00	486650	5445935	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137-Ma-00	486624	5443244	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138-Ma-00	486193	5439707	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140-Ma-00	486382	5437087	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
142-Ma-00	483394	5433781	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
144-Ma-00	483109	5433709	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
146-Ma-00	481500	5433700	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
147-Ma-00	482307	5431539	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
149-Ma-00	483737	5429842	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151-Ma-00	483879	5428808	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
153-Ma-00	483348	5435248	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
154-Ma-00	478879	5437583	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
160-Ma-00	478864	5433278	0	0	0	0	29	29	0	0	0	0	0	0	0	0	0	0
162-Ma-00	480133	5430688	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0
179-Ma-00	472369	5424704	0	0	0	0	37	37	0	0	0	0	0	0	0	0	0	0
181-Ma-00	473224	5422414	0	0	0	0	0	0	0	0	0	0	0	0	0	0	43	75
183-Ma-00	472617	5420789	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185-Ma-00	473369	5419780	0	0	0	0	9	9	1	1	0	0	0	0	0	0	50	75
187-Ma-00	472945	5415754	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
189-Ma-00	473498	5414992	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
191-Ma-00	474300	5415254	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
193-Ma-00	474181	5412442	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
195-Ma-00	473055	5409092	0	0	0	0	2	2	1	1	1	1	1	1	0	0	1	1
197-Ma-00	488314	5431530	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
199-Ma-00	488237	5431506	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
201-Ma-00	487809	5432377	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
208-Ma-00	490427	5422145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
215-Ma-00	487884	5420935	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
222-Ma-00	478937	5414277	0	0	0	0	3	3	0	0	0	0	0	0	0	0	0	0
224-Ma-00	476465	5409414	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
226-Ma-00	476586	5409661	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
228-Ma-00	476984	5409484	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230-Ma-00	478696	5408325	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
232-Ma-00	478998	5407997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239-Ma-00	499647	5432367	0	0	0	0	1	1	1	1	0	0	1	1	0	0	0	0
241-Ma-00	499715	5432507	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
248-Ma-00	498889	5428789	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
255-Ma-00	498692	5428353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs															
Number	Easting	Northing	Gth (%)		Gr		Ky (%)		Ldc		Lo		Me		Mo		Ms	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
127-Ma-00	491540	5424944	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
129-Ma-00	492251	5424383	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
131-Ma-00	497451	5410447	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
132-Ma-00	495381	5409098	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
134-Ma-00	494528	5408164	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
135-Ma-00	494114	5407638	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
136-Ma-00	486650	5445935	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137-Ma-00	486624	5443244	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
138-Ma-00	486193	5439707	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140-Ma-00	486382	5437087	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
142-Ma-00	483394	5433781	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
144-Ma-00	483109	5433709	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
146-Ma-00	481500	5433700	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
147-Ma-00	482307	5431539	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
149-Ma-00	483737	5429842	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
151-Ma-00	483879	5428808	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
153-Ma-00	483348	5435248	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
154-Ma-00	478879	5437583	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
160-Ma-00	478864	5433278	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
162-Ma-00	480133	5430688	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
179-Ma-00	472369	5424704	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
181-Ma-00	473224	5422414	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
183-Ma-00	472617	5420789	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
185-Ma-00	473369	5419780	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
187-Ma-00	472945	5415754	Tr	0.25	0	0	Tr	0.25	3	3	0	0	0	0	0	0	0	0
189-Ma-00	473498	5414992	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
191-Ma-00	474300	5415254	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
193-Ma-00	474181	5412442	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
195-Ma-00	473055	5409092	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
197-Ma-00	488314	5431530	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
199-Ma-00	488237	5431506	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
201-Ma-00	487809	5432377	Tr	0.25	0	0	0	0	0	0	0	0	2	2	0	0	0	0
208-Ma-00	490427	5422145	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
215-Ma-00	487884	5420935	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
222-Ma-00	478937	5414277	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
224-Ma-00	476465	5409414	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
226-Ma-00	476586	5409661	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
228-Ma-00	476984	5409484	0	0	1	1	0	0	0	0	0	0	1	1	0	0	0	0
230-Ma-00	478696	5408325	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
232-Ma-00	478998	5407997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
239-Ma-00	499647	5432367	0	0	0	0	0.5	0.5	2	2	0	0	0	0	0	0	0	0
241-Ma-00	499715	5432507	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
248-Ma-00	498889	5428789	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
255-Ma-00	498692	5428353	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs													
Number	Easting	Northing	Ng		Ol		Or	(%)	Py		Rr		Sa		SaCor	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
127-Ma-00	491540	5424944	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
129-Ma-00	492251	5424383	0	0	0	0	Tr	0.25	0	15	0	0	0	0	0	0
131-Ma-00	497451	5410447	0	0	0	0	2	2	0	0	0	0	0	0	0	0
132-Ma-00	495381	5409098	0	0	0	0	Tr	0.25	10	10	2	2	0	0	0	0
134-Ma-00	494528	5408164	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
135-Ma-00	494114	5407638	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
136-Ma-00	486650	5445935	0	0	0	0	0	0	0	0	0	0	0	0	0	0
137-Ma-00	486624	5443244	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
138-Ma-00	486193	5439707	0	0	0	0	0	0	0	400	3	3	0	0	0	0
140-Ma-00	486382	5437087	0	0	0	0	Tr	0.25	5	5	0	0	0	0	0	0
142-Ma-00	483394	5433781	0	0	0	0	Tr	0.25	6	6	0	0	0	0	0	0
144-Ma-00	483109	5433709	0	0	0	0	1	1	0	0	0	0	0	0	0	0
146-Ma-00	481500	5433700	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
147-Ma-00	482307	5431539	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
149-Ma-00	483737	5429842	0	0	0	0	Tr	0.25	0	20	0	0	0	0	0	0
151-Ma-00	483879	5428808	0	0	0	0	Tr	0.25	3	3	0	0	0	0	0	0
153-Ma-00	483348	5435248	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0
154-Ma-00	478879	5437583	0	0	0	0	Tr	0.25	12	12	0	0	0	0	0	0
160-Ma-00	478864	5433278	0	0	0	0	Tr	0.25	0	250	1	1	0	0	0	0
162-Ma-00	480133	5430688	0	0	0	0	1	1	0	20	0	0	0	0	0	0
179-Ma-00	472369	5424704	0	0	0	0	Tr	0.25	0	200	0	0	0	0	0	0
181-Ma-00	473224	5422414	0	0	0	0	5	5	5	5	0	0	0	0	0	0
183-Ma-00	472617	5420789	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
185-Ma-00	473369	5419780	0	0	0	0	Tr	0.25	0	30	1	1	0	0	1	1
187-Ma-00	472945	5415754	0	0	0	0	Tr	0.25	20	20	0	0	0	0	0	0
189-Ma-00	473498	5414992	0	0	0	0	5	5	0	20	0	0	0	0	0	0
191-Ma-00	474300	5415254	0	0	0	0	0	0	0	125	0	0	0	0	0	0
193-Ma-00	474181	5412442	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0
195-Ma-00	473055	5409092	0	0	14	14	2	2	5	5	0	0	0	0	0	0
197-Ma-00	488314	5431530	0	0	0	0	Tr	0.25	3	3	0	0	0	0	0	0
199-Ma-00	488237	5431506	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0
201-Ma-00	487809	5432377	0	0	0	0	5	5	5	5	0	0	0	0	0	0
208-Ma-00	490427	5422145	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
215-Ma-00	487884	5420935	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
222-Ma-00	478937	5414277	1	1	0	0	Tr	0.25	0	40	0	0	0	0	0	0
224-Ma-00	476465	5409414	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
226-Ma-00	476586	5409661	0	0	0	0	0	0	10	10	0	0	0	0	0	0
228-Ma-00	476984	5409484	0	0	0	0	0	0	0	0	0	0	0	0	0	0
230-Ma-00	478696	5408325	0	0	0	0	3	3	0	0	0	0	0	0	0	0
232-Ma-00	478998	5407997	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0
239-Ma-00	499647	5432367	5	5	0	0	3	3	0	300	0	0	0	0	0	0
241-Ma-00	499715	5432507	0	0	0	0	1	1	0	30	0	0	0	0	0	0
248-Ma-00	498889	5428789	1	1	0	0	Tr	0.25	0	20	0	0	0	0	0	0
255-Ma-00	498692	5428353	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs									
	Easting	Northing	Si	(%)	Sph		Sps	(%)	Sp		St	(%)
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
127-Ma-00	491540	5424944	0	0	0	0	0	0	0	0	Tr	0.25
129-Ma-00	492251	5424383	0	0	0	0	0	0	0	0	Tr	0.25
131-Ma-00	497451	5410447	0	0	0	0	0	0	0	0	0	0
132-Ma-00	495381	5409098	0	0	0	0	0	0	1	1	Tr	0.25
134-Ma-00	494528	5408164	0	0	0	0	0	0	0	0	Tr	0.25
135-Ma-00	494114	5407638	0	0	0	0	0	0	1	1	0	0
136-Ma-00	486650	5445935	0	0	0	0	0	0	0	0	0	0
137-Ma-00	486624	5443244	0	0	0	0	0	0	0	0	Tr	0.25
138-Ma-00	486193	5439707	0	0	0	0	0	0	0	0	Tr	0.25
140-Ma-00	486382	5437087	0	0	0	0	0	0	0	0	0	0
142-Ma-00	483394	5433781	0	0	0	0	0	0	0	0	Tr	0.25
144-Ma-00	483109	5433709	0	0	0	0	Tr	0.25	0	0	Tr	0.25
146-Ma-00	481500	5433700	0	0	0	0	0	0	0	0	Tr	0.25
147-Ma-00	482307	5431539	0	0	0	0	0	0	0	0	Tr	0.25
149-Ma-00	483737	5429842	Tr	0.25	0	0	0	0	0	0	0	0
151-Ma-00	483879	5428808	0	0	0	0	0	0	0	0	Tr	0.25
153-Ma-00	483348	5435248	Tr	0.25	0	0	0	0	0	0	Tr	0.25
154-Ma-00	478879	5437583	0	0	0	0	Tr	0.25	0	0	Tr	0.25
160-Ma-00	478864	5433278	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
162-Ma-00	480133	5430688	Tr	0.25	0	0	Tr	0.25	1	1	6	6
179-Ma-00	472369	5424704	Tr	0.25	10	10	0	0	0	0	1	1
181-Ma-00	473224	5422414	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
183-Ma-00	472617	5420789	Tr	0.25	2	2	0	0	0	0	Tr	0.25
185-Ma-00	473369	5419780	0	0	6	6	Tr	0.25	3	3	Tr	0.25
187-Ma-00	472945	5415754	0	0	0	0	Tr	0.25	0	0	Tr	0.25
189-Ma-00	473498	5414992	0	0	0	0	0	0	0	0	Tr	0.25
191-Ma-00	474300	5415254	0	0	0	0	0	0	0	0	Tr	0.25
193-Ma-00	474181	5412442	Tr	0.25	0	0	0	0	0	0	Tr	0.25
195-Ma-00	473055	5409092	0	0	40	40	0	0	0	0	Tr	0.25
197-Ma-00	488314	5431530	Tr	0.25	0	0	0	0	0	0	0	0
199-Ma-00	488237	5431506	0	0	0	0	0	0	0	0	Tr	0.25
201-Ma-00	487809	5432377	0	0	0	0	0	0	0	0	Tr	0.25
208-Ma-00	490427	5422145	0	0	0	0	Tr	0.25	0	0	Tr	0.25
215-Ma-00	487884	5420935	Tr	0.25	0	0	0	0	0	0	Tr	0.25
222-Ma-00	478937	5414277	0	0	0	0	1	1	0	0	2	2
224-Ma-00	476465	5409414	0	0	0	0	0	0	0	0	Tr	0.25
226-Ma-00	476586	5409661	0	0	0	0	0	0	0	0	Tr	0.25
228-Ma-00	476984	5409484	0	0	0	0	0	0	0	0	1	1
230-Ma-00	478696	5408325	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
232-Ma-00	478998	5407997	0	0	0	0	0	0	0	0	Tr	0.25
239-Ma-00	499647	5432367	Tr	0.25	0	0	0	0	1	1	Tr	0.25
241-Ma-00	499715	5432507	Tr	0.25	0	0	0	0	0	0	Tr	0.25
248-Ma-00	498889	5428789	0	0	0	0	0	0	0	0	Tr	0.25
255-Ma-00	498692	5428353	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	An		Ba		Ch		Co		Cr		Cru		Fl		Gah	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
257-Ma-00	498598	5426854	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
259-Ma-00	498027	5423501	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
261-Ma-00	499899	5423888	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
268-Ma-00	498446	5421108	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
270-Ma-00	497984	5421211	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
272-Ma-00	478785	5404226	0	0	1	1	28	28	2	2	1	1	2	2	0	0	0	0
299-Ma-00	469983	5409065	0	0	35	300	1	1	0	0	0	0	0	0	1	1	0	0
306-Ma-00	468201	5410479	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
308-Ma-00	481604	5401227	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
310-Ma-00	481114	5401412	0	0	21	21	1	1	0	0	0	0	0	0	0	0	0	0
312-Ma-00	480831	5401612	0	0	0	0	1	1	1	0	9	9	1	1	0	0	0	0
314-Ma-00	478648	5403597	0	0	0	0	1	1	0	0	0	0	0	0	2	2	0	0
316-Ma-00	477129	5404789	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0
318-Ma-00	475894	5404979	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
320-Ma-00	474901	5404616	0	0	8	8	12	12	0	0	0	0	0	0	0	0	0	0
339-Ma-00	491461	5402099	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
341-Ma-00	498473	5410699	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
343-Ma-00	495759	5409333	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
345-Ma-00	493601	5411977	0	0	0	0	2	2	1	1	0	0	1	1	0	0	0	0
357-Ma-00	469332	5414624	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
359-Ma-00	469347	5414327	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
361-Ma-00	468652	5414432	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
363-Ma-00	468495	5413779	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
365-Ma-00	468475	5412885	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
367-Ma-00	470864	5402730	0	0	39	500	3	3	0	0	1	1	0	0	0	0	0	0
374-Ma-00	472573	5401159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
376-Ma-00	499788	5406440	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
378-Ma-00	498940	5403368	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
380-Ma-00	498188	5404166	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
382-Ma-00	497924	5404282	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
384-Ma-00	497291	5403852	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
386-Ma-00	496573	5403394	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
388-Ma-00	494085	5402273	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
390-Ma-00	489562	5401756	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
392-Ma-00	483821	5400313	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
394-Ma-00	470933	5412839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
396-Ma-00	471957	5411839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
398-Ma-00	467452	5409722	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400-Ma-00	471984	5418150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
402-Ma-00	474929	5413823	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
404-Ma-00	473725	5412001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
406-Ma-00	473057	5413322	200	200	0	0	0	0	0	0	0	0	0	0	0	0	0	0
408-Ma-00	474739	5410100	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	0
410-Ma-00	490220	5409496	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs															
Number	Easting	Northing	Gth (%)		Gr		Ky (%)		Ldc		Lo		Me		Mo		Ms	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
257-Ma-00	498598	5426854	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
259-Ma-00	498027	5423501	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
261-Ma-00	499899	5423888	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
268-Ma-00	498446	5421108	Tr	0.25	0	0	Tr	0.25	2	2	0	0	0	0	0	0	0	0
270-Ma-00	497984	5421211	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
272-Ma-00	478785	5404226	Tr	0.25	0	0	Tr	0.25	2	2	0	0	0	0	0	0	0	0
299-Ma-00	469983	5409065	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
306-Ma-00	468201	5410479	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
308-Ma-00	481604	5401227	0	0	0	0	0	0	19	19	0	0	0	0	0	0	0	0
310-Ma-00	481114	5401412	0.5	0.5	1	1	Tr	0.25	13	13	0	0	0	0	0	0	0	0
312-Ma-00	480831	5401612	0	0	0	0	0	0	37	47	0	0	0	0	0	0	0	0
314-Ma-00	478648	5403597	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
316-Ma-00	477129	5404789	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
318-Ma-00	475894	5404979	Tr	0.25	0	0	0	0	1	1	0	0	0	0	0	0	0	0
320-Ma-00	474901	5404616	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
339-Ma-00	491461	5402099	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
341-Ma-00	498473	5410699	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
343-Ma-00	495759	5409333	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
345-Ma-00	493601	5411977	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
357-Ma-00	469332	5414624	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
359-Ma-00	469347	5414327	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
361-Ma-00	468652	5414432	Tr	0.25	0	0	0	0	0	0	0	0	0	0	2	2	0	0
363-Ma-00	468495	5413779	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0
365-Ma-00	468475	5412885	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
367-Ma-00	470864	5402730	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
374-Ma-00	472573	5401159	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
376-Ma-00	499788	5406440	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
378-Ma-00	498940	5403368	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
380-Ma-00	498188	5404166	Tr	0.25	1	1	0	0	1	1	0	0	0	0	1	1	0	0
382-Ma-00	497924	5404282	Tr	0.25	0	0	0	0	3	3	0	0	0	0	0	0	0	0
384-Ma-00	497291	5403852	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
386-Ma-00	496573	5403394	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
388-Ma-00	494085	5402273	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
390-Ma-00	489562	5401756	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
392-Ma-00	483821	5400313	Tr	0.25	0	0	Tr	0.25	4	4	0	0	0	0	0	0	0	0
394-Ma-00	470933	5412839	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
396-Ma-00	471957	5411839	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
398-Ma-00	467452	5409722	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
400-Ma-00	471984	5418150	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
402-Ma-00	474929	5413823	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
404-Ma-00	473725	5412001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
406-Ma-00	473057	5413322	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
408-Ma-00	474739	5410100	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
410-Ma-00	490220	5409496	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs													
Number	Easting	Northing	Ng		Ol		Or	(%)	Py		Rr		Sa		SaCor	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
257-Ma-00	498598	5426854	0	0	0	0	0	0	0	0	0	0	0	0	0	0
259-Ma-00	498027	5423501	0	0	0	0	0	0	0	0	2	2	0	0	0	0
261-Ma-00	499899	5423888	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
268-Ma-00	498446	5421108	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
270-Ma-00	497984	5421211	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
272-Ma-00	478785	5404226	0	0	0	0	6	6	0	2500	0	0	0	0	0	0
299-Ma-00	469983	5409065	0	0	0	0	5	5	0	20	0	0	0	0	0	0
306-Ma-00	468201	5410479	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
308-Ma-00	481604	5401227	0	0	0	0	Tr	0.25	0	200	0	0	0	0	0	0
310-Ma-00	481114	5401412	0	0	0	0	50	50	0	300	0	0	0	0	0	0
312-Ma-00	480831	5401612	3	3	3	3	3	3	0	15	0	0	0	0	0	0
314-Ma-00	478648	5403597	0	0	0	0	70	70	0	20	0	0	0	0	0	0
316-Ma-00	477129	5404789	1	1	18	18	20	20	0	300	1	0	0	0	0	0
318-Ma-00	475894	5404979	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0
320-Ma-00	474901	5404616	0	0	0	0	Tr	0.25	0	50	0	0	0	0	0	0
339-Ma-00	491461	5402099	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0
341-Ma-00	498473	5410699	0	0	0	0	20	20	0	0	0	0	0	0	0	0
343-Ma-00	495759	5409333	4	4	0	0	5	5	0	0	0	0	0	0	0	0
345-Ma-00	493601	5411977	0	0	1	1	3	3	0	100	0	0	0	0	0	0
357-Ma-00	469332	5414624	0	0	0	0	0	0	1	1	0	0	0	0	0	0
359-Ma-00	469347	5414327	0	0	0	0	Tr	0.25	3	3	0	0	0	0	0	0
361-Ma-00	468652	5414432	0	0	0	0	Tr	0.25	0	60	1	1	0	0	0	0
363-Ma-00	468495	5413779	0	0	0	0	0	0	5	5	0	0	0	0	0	0
365-Ma-00	468475	5412885	0	0	0	0	Tr	0.25	3	3	0	0	0	0	0	0
367-Ma-00	470864	5402730	1	1	0	0	40	40	0	20	0	0	0	0	0	0
374-Ma-00	472573	5401159	0	0	0	0	70	70	0	0	0	0	0	0	0	0
376-Ma-00	499788	5406440	0	0	0	0	Tr	0.25	0	15	0	0	0	0	0	0
378-Ma-00	498940	5403368	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
380-Ma-00	498188	5404166	0	0	0	0	3	3	0	0	0	0	0	0	0	0
382-Ma-00	497924	5404282	0	0	0	0	2	2	5	5	0	0	0	0	0	0
384-Ma-00	497291	5403852	0	0	0	0	30	30	0	0	0	0	0	0	0	0
386-Ma-00	496573	5403394	0	0	0	0	5	5	3	3	0	0	0	0	0	0
388-Ma-00	494085	5402273	1	1	0	0	Tr	0.25	0	0	0	0	0	0	0	0
390-Ma-00	489562	5401756	0	0	0	0	2	2	0	0	0	0	0	0	0	0
392-Ma-00	483821	5400313	0	0	0	0	15	15	0	0	1	1	0	0	0	0
394-Ma-00	470933	5412839	0	0	0	0	2	2	3	3	0	0	0	0	0	0
396-Ma-00	471957	5411839	0	0	0	0	2	2	10	10	0	0	0	0	0	0
398-Ma-00	467452	5409722	0	0	0	0	2	2	3	3	1	1	0	0	0	0
400-Ma-00	471984	5418150	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
402-Ma-00	474929	5413823	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
404-Ma-00	473725	5412001	0	0	0	0	2	2	0	0	0	0	0	0	0	0
406-Ma-00	473057	5413322	0	0	0	0	1	1	1	1	0	0	0	0	0	0
408-Ma-00	474739	5410100	0	0	0	0	0	0	1	1	0	0	0	0	0	0
410-Ma-00	490220	5409496	0	0	0	0	3	3	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs									
	Easting	Northing	Si	(%)	Sph		Sps	(%)	Sp		St	(%)
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
257-Ma-00	498598	5426854	0	0	0	0	0	0	0	0	0	0
259-Ma-00	498027	5423501	0	0	0	0	0	0	0	0	Tr	0.25
261-Ma-00	499899	5423888	0	0	0	0	0	0	0	0	Tr	0.25
268-Ma-00	498446	5421108	Tr	0.25	0	0	0	0	0	0	0	0
270-Ma-00	497984	5421211	0	0	0	0	0	0	0	0	Tr	0.25
272-Ma-00	478785	5404226	Tr	0.25	0	0	0	0	1	1	1	1
299-Ma-00	469983	5409065	Tr	0.25	0	0	Tr	0.25	0	0	1	1
306-Ma-00	468201	5410479	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
308-Ma-00	481604	5401227	0	0	0	0	Tr	0.25	0	0	0	0
310-Ma-00	481114	5401412	0	0	0	0	0	0	0	0	Tr	0.25
312-Ma-00	480831	5401612	0	0	0	0	0	0	1	1	Tr	0.25
314-Ma-00	478648	5403597	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
316-Ma-00	477129	5404789	Tr	0.25	0	0	1	1	0	0	1	1
318-Ma-00	475894	5404979	Tr	0.25	0	0	0	0	0	0	Tr	0.25
320-Ma-00	474901	5404616	0	0	0	0	0	0	0	0	Tr	0.25
339-Ma-00	491461	5402099	Tr	0.25	0	0	0	0	0	0	Tr	0.25
341-Ma-00	498473	5410699	0	0	0	0	0	0	0	0	0	0
343-Ma-00	495759	5409333	Tr	0.25	0	0	0	0	0	0	Tr	0.25
345-Ma-00	493601	5411977	0	0	0	0	0	0	1	1	0.5	0.5
357-Ma-00	469332	5414624	0	0	0	0	0	0	0	0	Tr	0.25
359-Ma-00	469347	5414327	Tr	0.25	0	0	0	0	0	0	Tr	0.25
361-Ma-00	468652	5414432	0	0	0	0	0	0	0	0	Tr	0.25
363-Ma-00	468495	5413779	Tr	0.25	0	0	0	0	0	0	Tr	0.25
365-Ma-00	468475	5412885	Tr	0.25	0	0	Tr	0.25	1	1	Tr	0.25
367-Ma-00	470864	5402730	0	0	0	0	0	0	0	0	0	0
374-Ma-00	472573	5401159	0	0	0	0	0	0	0	0	0	0
376-Ma-00	499788	5406440	Tr	0.25	0	0	0	0	0	0	Tr	0.25
378-Ma-00	498940	5403368	0	0	0	0	0	0	0	0	0	0
380-Ma-00	498188	5404166	0	0	0	0	0	0	0	0	Tr	0.25
382-Ma-00	497924	5404282	Tr	0.25	0	0	0	0	0	0	Tr	0.25
384-Ma-00	497791	5403852	0	0	0	0	0	0	0	0	Tr	0.25
386-Ma-00	496573	5403394	Tr	0.25	0	0	0	0	0	0	Tr	0.25
388-Ma-00	494085	5402273	0	0	0	0	0	0	0	0	Tr	0.25
390-Ma-00	489562	5401756	Tr	0.25	0	0	0	0	0	0	Tr	0.25
392-Ma-00	483821	5400313	Tr	0.25	0	0	0	0	0	0	Tr	0.25
394-Ma-00	470933	5412839	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
396-Ma-00	471957	5411839	Tr	0.25	0	0	0	0	1	1	1	1
398-Ma-00	467452	5409722	0	0	0	0	Tr	0.25	0	0	Tr	0.25
400-Ma-00	471984	5418150	0	0	0	0	0	0	0	0	Tr	0.25
402-Ma-00	474929	5413823	0	0	0	0	0	0	0	0	Tr	0.25
404-Ma-00	473725	5412001	0	0	0	0	0	0	0	0	Tr	0.25
406-Ma-00	473057	5413322	Tr	0.25	0	0	0	0	0	0	0.5	0.5
408-Ma-00	474739	5410100	Tr	0.25	0	0	0	0	0	0	Tr	0.25
410-Ma-00	490220	5409496	0	0	0	0	0	0	0	0	Tr	0.25

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	An		Ba		Ch		Co		Cr		Cru		Fl		Gah	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
412-Ma-00	492409	5411666	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
414-Ma-00	492697	5411855	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
416-Ma-00	493605	5413381	0	0	0	0	2	2	1	1	0	0	1	1	0	0	0	0
418-Ma-00	482416	5404038	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
426-Ma-00	488875	5422642	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
428-Ma-00	488372	5422429	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
440-Ma-00	493067	5426747	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
442-Ma-00	493124	5425624	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1000-Ma-00	484851	5435929	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1012-Ma-00	499453	5450913	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0
1014-Ma-00	499725	5450931	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1021-Ma-00	498106	5448464	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1028-Ma-00	499097	5444941	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1030-Ma-00	499370	5445711	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1032-Ma-00	498699	5445841	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1034-Ma-00	499818	5446944	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1036-Ma-00	499837	5448829	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1038-Ma-00	485863	5446484	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1040-Ma-00	481352	5449276	0	0	0	0	0	0	0	0	4	4	0	0	0	0	0	0
1042-Ma-00	481669	5449276	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
1044-Ma-00	482580	5449589	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1046-Ma-00	483752	5447355	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1053-Ma-00	486336	5446639	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1055-Ma-00	486304	5449275	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1057-Ma-00	485734	5449319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1059-Ma-00	486083	5450973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1072-Ma-00	484490	5452491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1074-Ma-00	479182	5452339	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1076-Ma-00	479377	5452514	0	0	0	0	1	1	0	0	0	0	0	0	0	0	2	2
1083-Ma-00	492856	5423438	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1085-Ma-00	493715	5421599	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1092-Ma-00	495338	5420358	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1094-Ma-00	475751	5450847	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1101-Ma-00	476386	5450890	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1103-Ma-00	477444	5451937	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1105-Ma-00	478426	5454074	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1107-Ma-00	478431	5454790	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1109-Ma-00	480926	5454577	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1111-Ma-00	484570	5454877	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0
1113-Ma-00	487676	5454025	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1120-Ma-00	489031	5453256	0	0	0	0	38	38	0	0	0	0	0	0	0	0	0	0
1122-Ma-00	487931	5450988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1129-Ma-00	489246	5450159	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1131-Ma-00	471451	5445664	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs															
Number	Easting	Northing	Gth (%)		Gr		Ky (%)		Ldc		Lo		Me		Mo		Ms	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
412-Ma-00	492409	5411666	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
414-Ma-00	492697	5411855	15	15	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
416-Ma-00	493605	5413381	Tr	0.25	0	0	Tr	0.25	6	6	0	0	0	0	0	0	0	0
418-Ma-00	482416	5404038	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
426-Ma-00	488875	5422642	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
428-Ma-00	488372	5422429	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
440-Ma-00	493067	5426747	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
442-Ma-00	493124	5425624	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1000-Ma-00	484851	5435929	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1012-Ma-00	499453	5450913	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1014-Ma-00	499725	5450931	Tr	0.25	0	0	Tr	0.25	0	0	0	0	1	1	0	0	0	0
1021-Ma-00	498106	5448464	0	0	0	0	0	0	0	0	0	0	0	0	11	11	0	0
1028-Ma-00	499097	5444941	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1030-Ma-00	499370	5445711	0	0	0	0	0	0	0	0	0	0	0	0	4	4	0	0
1032-Ma-00	498699	5445841	0	0	0	0	Tr	0.25	0	0	0	0	1	1	0	0	0	0
1034-Ma-00	499818	5446944	0	0	1	1	0	0	0	0	0	0	0	0	1	1	0	0
1036-Ma-00	499837	5448829	0	0	0	0	Tr	0.25	0	0	0	0	0	0	6	6	0	0
1038-Ma-00	485863	5446484	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1040-Ma-00	481352	5449276	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1042-Ma-00	481669	5449276	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1044-Ma-00	482580	5449589	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1046-Ma-00	483752	5447355	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1053-Ma-00	486336	5446639	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1055-Ma-00	486304	5449275	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1057-Ma-00	485734	5449319	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1059-Ma-00	486083	5450973	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1072-Ma-00	484490	5452491	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1074-Ma-00	479182	5452339	Tr	0.25	0	0	Tr	0.25	0	0	0	0	1	1	1	1	0	0
1076-Ma-00	479377	5452514	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1083-Ma-00	492856	5423438	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1085-Ma-00	493715	5421599	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
1092-Ma-00	495338	5420358	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1094-Ma-00	475751	5450847	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1101-Ma-00	476386	5450890	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1103-Ma-00	477444	5451937	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1105-Ma-00	478426	5454074	Tr	0.25	0	0	2	2	0	0	0	0	0	0	0	0	0	0
1107-Ma-00	478431	5454790	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1109-Ma-00	480926	5454577	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1111-Ma-00	484570	5454877	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1113-Ma-00	487676	5454025	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1120-Ma-00	489031	5453256	0	0	0	0	Tr	0.25	0	0	0	0	0	0	1	1	0	0
1122-Ma-00	487931	5450988	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1129-Ma-00	489246	5450159	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1131-Ma-00	471451	5445664	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs													
Number	Easting	Northing	Ng		Ol		Or	(%)	Py		Rr		Sa		SaCor	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
412-Ma-00	492409	5411666	0	0	0	0	3	3	0	50	0	0	0	0	0	0
414-Ma-00	492697	5411855	0	0	0	0	3	3	0	15	0	0	0	0	0	0
416-Ma-00	493605	5413381	0	0	1	1	Tr	0.25	5	5	2	2	0	0	0	0
418-Ma-00	482416	5404038	0	0	0	0	15	15	0	0	0	0	0	0	0	0
426-Ma-00	488875	5422642	0	0	0	0	0	0	1	1	0	0	0	0	0	0
428-Ma-00	488372	5422429	0	0	0	0	0	0	1	1	0	0	0	0	0	0
440-Ma-00	493067	5426747	0	0	0	0	Tr	0.25	2	2	1	1	0	0	0	0
442-Ma-00	493124	5425624	0	0	0	0	Tr	0.25	0	15	0	0	0	0	0	0
1000-Ma-00	484851	5435929	0	0	0	0	5	5	0	15	0	0	0	0	0	0
1012-Ma-00	499453	5450913	0	0	0	0	Tr	0.25	0	1	1	0	0	0	0	0
1014-Ma-00	499725	5450931	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1021-Ma-00	498106	5448464	0	0	0	0	0	0	0	20	0	0	0	0	0	0
1028-Ma-00	499097	5444941	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1030-Ma-00	499370	5445711	0	0	0	0	Tr	0.25	0	12000	0	0	0	0	0	0
1032-Ma-00	498699	5445841	0	0	0	0	10	10	1	1	0	0	0	0	0	0
1034-Ma-00	499818	5446944	0	0	0	0	2	2	8	8	0	0	0	0	0	0
1036-Ma-00	499837	5448829	0	0	0	0	0.5	0.5	1	1	1	1	0	0	0	0
1038-Ma-00	485863	5446484	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1040-Ma-00	481352	5449276	0	0	0	0	1	1	0	0	1	1	0	0	0	0
1042-Ma-00	481669	5449276	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0
1044-Ma-00	482580	5449589	0	0	0	0	1	1	3	3	0	0	0	0	0	0
1046-Ma-00	483752	5447355	0	0	0	0	2	2	1	1	0	0	0	0	0	0
1053-Ma-00	486336	5446639	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1055-Ma-00	486304	5449275	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1057-Ma-00	485734	5449319	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1059-Ma-00	486083	5450973	0	0	0	0	2	2	0	0	0	0	0	0	0	0
1072-Ma-00	484490	5452491	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1074-Ma-00	479182	5452339	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0
1076-Ma-00	479377	5452514	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1083-Ma-00	492856	5423438	0	0	0	0	1	1	2	2	0	0	0	0	0	0
1085-Ma-00	493715	5421599	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1092-Ma-00	495338	5420358	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1094-Ma-00	475751	5450847	1	1	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1101-Ma-00	476386	5450890	0	0	0	0	Tr	0.25	0	20	0	0	0	0	0	0
1103-Ma-00	477444	5451937	0	0	0	0	Tr	0.25	8	8	0	0	0	0	0	0
1105-Ma-00	478426	5454074	0	0	0	0	2	2	0	0	0	0	0	0	0	0
1107-Ma-00	478431	5454790	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1109-Ma-00	480926	5454577	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1111-Ma-00	484570	5454877	0	0	0	0	0	0	0	20	2	2	0	0	0	0
1113-Ma-00	487676	5454025	0	0	0	0	5	5	0	20	2	2	0	0	0	0
1120-Ma-00	489031	5453256	0	0	0	0	0	0	0	40	0	0	0	0	0	0
1122-Ma-00	487931	5450988	0	0	0	0	10	10	0	20	0	0	0	0	0	0
1129-Ma-00	489246	5450159	0	0	0	0	30	30	0	0	0	0	0	0	0	0
1131-Ma-00	471451	5445664	0	0	0	0	0	0.25	5	5	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs									
	Easting	Northing	Si (%)		Sph		Sps (%)		Sp		St (%)	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
412-Ma-00	492409	5411666	0	0	0	0	0	0	0	0	Tr	0.25
414-Ma-00	492697	5411855	0	0	0	0	0	0	0	0	Tr	0.25
416-Ma-00	493605	5413381	0	0	0	0	0	0	0	0	1	1
418-Ma-00	482416	5404038	0	0	0	0	0	0	0	0	Tr	0.25
426-Ma-00	488875	5422642	Tr	0.25	0	0	0	0	0	0	Tr	0.25
428-Ma-00	488372	5422429	0	0	0	0	0	0	0	0	Tr	0.25
440-Ma-00	493067	5426747	Tr	0.25	0	0	0	0	1	1	Tr	0.25
442-Ma-00	493124	5425624	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1000-Ma-00	484851	5435929	0	0	0	0	0	0	0	0	1	1
1012-Ma-00	499453	5450913	0	0	0	0	0	0	0	0	Tr	0.25
1014-Ma-00	499725	5450931	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1021-Ma-00	498106	5448464	0	0	0	0	0	0	0	0	0	0
1028-Ma-00	499097	5444941	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1030-Ma-00	499370	5445711	0	0	0	0	0	0	0	0	Tr	0.25
1032-Ma-00	498699	5445841	0	0	0	0	0	0	0	0	Tr	0.25
1034-Ma-00	499818	5446944	0	0	0	0	0	0	0	0	Tr	0.25
1036-Ma-00	499837	5448829	0	0	1	1	0	0	1	1	Tr	0.25
1038-Ma-00	485863	5446484	Tr	0.25	0	0	0	0	0	0	0	0
1040-Ma-00	481352	5449276	0	0	0	0	0	0	0	0	Tr	0.25
1042-Ma-00	481669	5449276	0	0	0	0	Tr	0.25	0	0	Tr	0.25
1044-Ma-00	482580	5449589	0	0	0	0	0	0	0	0	Tr	0.25
1046-Ma-00	483752	5447355	0	0	0	0	Tr	0.25	0	0	Tr	0.25
1053-Ma-00	486336	5446639	0	0	0	0	0	0	0	0	0	0
1055-Ma-00	486304	5449275	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1057-Ma-00	485734	5449319	0.5	0.5	0	0	0	0	0	0	0	0
1059-Ma-00	486083	5450973	0.5	0.5	0	0	Tr	0.25	0	0	1	1
1072-Ma-00	484490	5452491	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1074-Ma-00	479182	5452339	0	0	0	0	0	0	0	0	Tr	0.25
1076-Ma-00	479377	5452514	Tr	0.25	0	0	Tr	0.25	0	0	2	2
1083-Ma-00	492856	5423438	0	0	0	0	0	0	0	0	Tr	0.25
1085-Ma-00	493715	5421599	0	0	0	0	Tr	0.25	0	0	Tr	0.25
1092-Ma-00	495338	5420358	0	0	0	0	Tr	0.25	0	0	Tr	0.25
1094-Ma-00	475751	5450847	0	0	0	0	0	0	0	0	0	0
1101-Ma-00	476386	5450890	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1103-Ma-00	477444	5451937	0	0	0	0	0	0	0	0	Tr	0.25
1105-Ma-00	478426	5454074	1	1	0	0	0	0	0	0	1	1
1107-Ma-00	478431	5454790	0	0	0	0	0	0	2	2	1	1
1109-Ma-00	480926	5454577	0	0	0	0	0	0	0	0	Tr	0.25
1111-Ma-00	484570	5454877	0	0	0	0	0	0	1	1	2	2
1113-Ma-00	487676	5454025	Tr	0.25	0	0	0	0	0	0	0.5	0.5
1120-Ma-00	489031	5453256	0	0	0	0	0	0	0	0	Tr	0.25
1122-Ma-00	487931	5450988	0	0	0	0	0	0	0	0	Tr	0.25
1129-Ma-00	489246	5450159	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1131-Ma-00	471451	5445664	0	0	0	0	Tr	0.25	1	1	Tr	0.25

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	An		Ba		Ch		Co		Cr		Cru		Fl		Gah	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1133-Ma-00	471033	5445076	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1135-Ma-00	470264	5445285	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1142-Ma-00	473700	5446739	0	0	0	0	13	13	0	0	2	2	0	0	0	0	0	0
1144-Ma-00	474915	5446805	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1146-Ma-00	473929	5449655	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1153-Ma-00	475735	5447544	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
1155-Ma-00	496229	5418229	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1157-Ma-00	495628	5417857	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1159-Ma-00	494846	5416121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1161-Ma-00	494707	5415289	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1163-Ma-00	494357	5415288	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1165-Ma-00	493473	5413831	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0
1172-Ma-00	498586	5417681	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1179-Ma-00	498156	5417291	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1181-Ma-00	495944	5413853	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1188-Ma-00	496624	5414461	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1190-Ma-00	497373	5414694	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1192-Ma-00	487864	5405891	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1194-Ma-00	487842	5408377	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1201-Ma-00	487635	5407886	0	0	0	0	5	5	0	0	6	6	0	0	0	0	0	0
1203-Ma-00	485784	5406654	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1205-Ma-00	485293	5406964	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0
1207-Ma-00	484955	5406824	0	0	0	0	4	4	0	0	0	0	0	0	0	0	0	0
1214-Ma-00	480869	5408425	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1216-Ma-00	480869	5409592	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1218-Ma-00	480244	5407543	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1225-Ma-00	464341	5401257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1229-Ma-00	466850	5400818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1234-Ma-00	466987	5403152	0	0	0	0	5	5	0	0	0	0	0	0	0	0	0	0
1291-Ma-00	465700	5453200	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1293-Ma-00	464687	5449967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1295-Ma-00	464609	5443991	0	0	0	0	2	2	0	0	2	2	0	0	0	0	0	0
1297-Ma-00	467477	5445381	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1299-Ma-00	471837	5447588	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1301-Ma-00	472042	5441121	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1303-Ma-00	473875	5440170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1305-Ma-00	465835	5439184	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1307-Ma-00	465306	5435007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1309-Ma-00	466913	5431850	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1311-Ma-00	472384	5433989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1313-Ma-00	465146	5429858	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1315-Ma-00	465452	5425095	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1317-Ma-00	463409	5418772	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1319-Ma-00	474671	5428720	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs															
Number	Easting	Northing	Gth (%)		Gr		Ky (%)		Ldc		Lo		Me		Mo		Ms	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1133-Ma-00	471033	5445076	Tr	0.25	0	0	Tr	0.25	4	4	0	0	0	0	0	0	0	0
1135-Ma-00	470264	5445285	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1142-Ma-00	473700	5446739	0	0	0	0	Tr	0.25	0	0	0	0	0	0	1	1	0	0
1144-Ma-00	474915	5446805	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
1146-Ma-00	473929	5449655	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1153-Ma-00	475735	5447544	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1155-Ma-00	496229	5418229	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1157-Ma-00	495628	5417857	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
1159-Ma-00	494846	5416121	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1161-Ma-00	494707	5415289	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1163-Ma-00	494357	5415288	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
1165-Ma-00	493473	5413831	Tr	0.25	0	0	Tr	0.25	0	0	0	0	1	1	0	0	0	0
1172-Ma-00	498586	5417681	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1179-Ma-00	498156	5417291	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
1181-Ma-00	495944	5413853	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1188-Ma-00	496624	5414461	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1190-Ma-00	497373	5414694	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1192-Ma-00	487864	5405891	0	0	0	0	1	1	2	2	0	0	0	0	0	0	0	0
1194-Ma-00	487842	5408377	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1201-Ma-00	487635	5407886	Tr	0.25	0	0	Tr	0.25	25	442	0	0	0	0	0	0	0	0
1203-Ma-00	485784	5406654	0	0	0	0	0	0	21	21	0	0	0	0	0	0	0	0
1205-Ma-00	485293	5406964	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1207-Ma-00	484955	5406824	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1214-Ma-00	480869	5408425	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1216-Ma-00	480869	5409592	Tr	0.25	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
1218-Ma-00	480244	5407543	Tr	0.25	0	0	8	8	0	0	0	0	0	0	0	0	0	0
1225-Ma-00	464341	5401257	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1229-Ma-00	466850	5400818	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1234-Ma-00	466987	5403152	0	0	0	0	0	0	5	5	0	0	0	0	0	0	0	0
1291-Ma-00	465700	5453200	Tr	0.25	0	0	0	0	0	0	0	0	0	0	3	3	0	0
1293-Ma-00	464687	5449967	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1295-Ma-00	464609	5443991	Tr	0.25	0	0	Tr	0.25	3	3	0	0	0	0	0	0	0	0
1297-Ma-00	467477	5445381	40	40	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1299-Ma-00	471837	5447588	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1301-Ma-00	472042	5441121	0	0	0	0	Tr	0.25	3	3	0	0	0	0	0	0	0	0
1303-Ma-00	473875	5440170	0	0	0	0	Tr	0.25	0	0	0	0	0	0	1	1	0	0
1305-Ma-00	465835	5439184	Tr	0.25	0	0	0	0	1	1	0	0	0	0	1	1	0	0
1307-Ma-00	465306	5435007	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1309-Ma-00	466913	5431850	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1311-Ma-00	472384	5433989	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1313-Ma-00	465146	5429858	0	0	0	0	Tr	0.25	1	1	1	1	1	1	0	0	0	0
1315-Ma-00	465452	5425095	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1317-Ma-00	463409	5418772	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1319-Ma-00	474671	5428720	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs													
Number	Easting	Northing	Ng		Ol		Or	(%)	Py		Rr		Sa		SaCor	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1133-Ma-00	471033	5445076	0	0	0	0	1	1	0	25	0	0	1	1	0	0
1135-Ma-00	470264	5445285	0	0	0	0	0	0	5	5	0	0	0	0	0	0
1142-Ma-00	473700	5446739	0	0	0	0	0	0	0	600	0	0	0	0	0	0
1144-Ma-00	474915	5446805	0	0	0	0	Tr	0.25	2	2	0	0	1	1	0	0
1146-Ma-00	473929	5449655	1	1	0	0	1	1	2	2	1	1	0	0	0	0
1153-Ma-00	475735	5447544	0	0	0	0	0	0	8	8	0	0	0	0	0	0
1155-Ma-00	496229	5418229	0	0	0	0	0.5	0.5	4	4	0	0	0	0	0	0
1157-Ma-00	495628	5417857	0	0	0	0	Tr	0.25	5	5	0	0	0	0	0	0
1159-Ma-00	494846	5416121	0	0	0	0	Tr	0.25	0	20	0	0	0	0	0	0
1161-Ma-00	494707	5415289	0	0	0	0	0	0	0	2000	0	0	0	0	0	0
1163-Ma-00	494357	5415288	0	0	0	0	5	5	0	15	0	0	0	0	0	0
1165-Ma-00	493473	5413831	0	0	0	0	2	2	0	150	0	0	0	0	0	0
1172-Ma-00	498586	5417681	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1179-Ma-00	498156	5417291	0	0	0	0	0.5	0.5	0	0	0	0	0	0	0	0
1181-Ma-00	495944	5413853	0	0	0	0	35	35	0	25	0	0	0	0	0	0
1188-Ma-00	496624	5414461	4	4	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1190-Ma-00	497373	5414694	0	0	0	0	3	3	1	1	0	0	0	0	0	0
1192-Ma-00	487864	5405891	0	0	0	0	8	8	0	0	0	0	0	0	0	0
1194-Ma-00	487842	5408377	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1201-Ma-00	487635	5407886	0	0	0	0	Tr	0.25	0	75	0	0	0	0	0	0
1203-Ma-00	485784	5406654	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0
1205-Ma-00	485293	5406964	0	0	0	0	Tr	0.25	0	30	1	1	0	0	0	0
1207-Ma-00	484955	5406824	0	0	0	0	2	2	0	50	0	0	0	0	0	0
1214-Ma-00	480869	5408425	0	0	0	0	30	30	0	40	0	0	0	0	0	0
1216-Ma-00	480869	5409592	0	0	0	0	0	0	0	400	0	0	0	0	0	0
1218-Ma-00	480244	5407543	0	0	0	0	Tr	0.25	0	40	0	0	0	0	0	0
1225-Ma-00	464341	5401257	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1229-Ma-00	466850	5400818	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1234-Ma-00	466987	5403152	0	0	0	0	Tr	0.25	5	5	0	0	0	0	0	0
1291-Ma-00	465700	5453200	0	0	0	0	Tr	0.25	0	125	0	0	0	0	0	0
1293-Ma-00	464687	5449967	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1295-Ma-00	464609	5443991	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1297-Ma-00	467477	5445381	0	0	0	0	0	0	0	30	0	0	0	0	0	0
1299-Ma-00	471837	5447588	2	2	0	0	2	2	0	100	0	0	0	0	0	0
1301-Ma-00	472042	5441121	1	1	0	0	4	4	4	4	0	0	0	0	0	0
1303-Ma-00	473875	5440170	0	0	0	0	Tr	0.25	0	200	0	0	0	0	0	0
1305-Ma-00	465835	5439184	0	0	0	0	Tr	0.25	0	150	0	0	0	0	0	0
1307-Ma-00	465306	5435007	0	0	0	0	Tr	0.25	2	2	0	0	0	0	0	0
1309-Ma-00	466913	5431850	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1311-Ma-00	472384	5433989	0	0	0	0	2	2	3	3	0	0	0	0	0	0
1313-Ma-00	465146	5429858	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1315-Ma-00	465452	5425095	0	0	0	0	0	0	3	3	0	0	0	0	0	0
1317-Ma-00	463409	5418772	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1319-Ma-00	474671	5428720	0	0	0	0	Tr	0.25	14	14	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs									
	Easting	Northing	Si (%)		Sph		Sps (%)		Sp		St (%)	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1133-Ma-00	471033	5445076	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1135-Ma-00	470264	5445285	0	0	0	0	0	0	0	0	0	0
1142-Ma-00	473700	5446739	Tr	0.25	0	0	0	0	0	0	2	2
1144-Ma-00	474915	5446805	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1146-Ma-00	473929	5449655	Tr	0.25	0	0	0	0	0	0	1	1
1153-Ma-00	475735	5447544	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1155-Ma-00	496229	5418229	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1157-Ma-00	495628	5417857	0.5	0.5	0	0	0	0	2	2	1	1
1159-Ma-00	494846	5416121	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
1161-Ma-00	494707	5415289	0	0	0	0	0	0	0	0	0	0
1163-Ma-00	494357	5415288	Tr	0.25	0	0	Tr	0.25	0	0	0.5	0.5
1165-Ma-00	493473	5413831	0	0	0	0	0	0	0	0	1	1
1172-Ma-00	498586	5417681	0	0	0	0	1	1	0	0	Tr	0.25
1179-Ma-00	498156	5417291	Tr	0.25	0	0	0	0	0	0	1	1
1181-Ma-00	495944	5413853	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1188-Ma-00	496624	5414461	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1190-Ma-00	497373	5414694	0	0	0	0	0	0	0	0	Tr	0.25
1192-Ma-00	487864	5405891	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1194-Ma-00	487842	5408377	0	0	0	0	0	0	0	0	Tr	0.25
1201-Ma-00	487635	5407886	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1203-Ma-00	485784	5406654	0	0	0	0	0	0	0	0	0	0
1205-Ma-00	485293	5406964	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1207-Ma-00	484955	5406824	0	0	0	0	0	0	0	0	2	2
1214-Ma-00	480869	5408425	0	0	0	0	0	0	0	0	Tr	0.25
1216-Ma-00	480869	5409592	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1218-Ma-00	480244	5407543	0	0	0	0	0	0	0	0	2	2
1225-Ma-00	464341	5401257	0	0	0	0	0	0	0	0	0	0
1229-Ma-00	466850	5400818	0	0	0	0	0	0	0	0	0	0
1234-Ma-00	466987	5403152	Tr	0.25	0	0	0	0	0	0	0	0
1291-Ma-00	465700	5453200	0	0	0	0	0	0	0	0	0	0
1293-Ma-00	464687	5449967	0	0	0	0	0	0	0	0	Tr	0.25
1295-Ma-00	464609	5443991	0	0	0	0	Tr	0.25	1	1	0	0
1297-Ma-00	467477	5445381	0	0	0	0	0	0	0	0	0	0
1299-Ma-00	471837	5447588	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
1301-Ma-00	472042	5441121	0	0	0	0	0	0	0	0	1	1
1303-Ma-00	473875	5440170	0	0	0	0	0	0	0	0	Tr	0.25
1305-Ma-00	465835	5439184	0	0	0	0	0	0	0	0	Tr	0.25
1307-Ma-00	465306	5435007	Tr	0.25	0	0	0	0	0	0	0.5	0.5
1309-Ma-00	466913	5431850	Tr	0.25	0	0	Tr	0.25	0	0	0	0
1311-Ma-00	472384	5433989	Tr	0.25	0	0	0	0	0	0	0.5	0.5
1313-Ma-00	465146	5429858	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
1315-Ma-00	465452	5425095	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1317-Ma-00	463409	5418772	Tr	0.25	0	0	0	0	0	0	2	2
1319-Ma-00	474671	5428720	0	0	0	0	0	0	1	1	Tr	0.25

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	An		Ba		Ch		Co		Cr		Cru		Fl		Gah	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1321-Ma-00	481400	5428300	20	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1323-Ma-00	478946	5427213	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1325-Ma-00	480197	5423539	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1327-Ma-00	481915	5417579	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1329-Ma-00	485579	5414207	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Tm-00	483601	5442135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33-Tm-00	494850	5448000	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
52-Tm-00	495804	5442936	0	0	0	0	0	0	0	0	6	6	0	0	0	0	0	0
73-Tm-00	493530	5454299	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
78-Tm-00	494737	5435257	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
83-Tm-00	494798	5434715	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
88-Tm-00	492668	5426882	0	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0
117-Tm-00	486233	5429330	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
159-Tm-00	479053	5437975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
168-Tm-00	478570	5433867	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173-Tm-00	479541	5442098	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
178-Tm-00	476282	5438147	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
207-Tm-00	487195	5433331	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
214-Tm-00	490133	5422331	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
221-Tm-00	484988	5420771	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
238-Tm-00	478680	5407209	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
247-Tm-00	499747	5432466	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
254-Tm-00	498367	5427658	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
267-Tm-00	499489	5423446	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
277-Tm-00	474197	5412060	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
283-Tm-00	472848	5418069	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
288-Tm-00	473301	5408515	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
293-Tm-00	499575	5410531	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
298-Tm-00	473228	5424462	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
305-Tm-00	469983	5409065	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
351-Tm-00	492504	5409192	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
356-Tm-00	471641	5409544	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
373-Tm-00	470775	5402459	0	0	0	0	6	6	0	0	0	0	0	0	0	0	0	0
434-Tm-00	484402	5430696	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2
439-Tm-00	488695	5428153	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
448-Tm-00	496533	5417684	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1006-Tm-00	484537	5436937	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1011-Tm-00	499802	5452292	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1020-Tm-00	498531	5448365	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1027-Tm-00	497791	5443425	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1052-Tm-00	484016	5447109	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1066-Tm-00	479556	5447053	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
1071-Tm-00	483325	5451473	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1082-Tm-00	480044	5453557	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs															
Number	Easting	Northing	Gth (%)		Gr		Ky (%)		Ldc		Lo		Me		Mo		Ms	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1321-Ma-00	481400	5428300	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	0
1323-Ma-00	478946	5427213	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1325-Ma-00	480197	5423539	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1327-Ma-00	481915	5417579	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1329-Ma-00	485579	5414207	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12-Tm-00	483601	5442135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
33-Tm-00	494850	5448000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
52-Tm-00	495804	5442936	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
73-Tm-00	493530	5454299	Tr	0.25	0	0	0	0	1	1	0	0	0	0	0	0	0	0
78-Tm-00	494737	5435257	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
83-Tm-00	494798	5434715	Tr	0.25	0	0	Tr	0.25	7	7	0	0	0	0	0	0	0	0
88-Tm-00	492668	5426882	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
117-Tm-00	486233	5429330	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
159-Tm-00	479053	5437975	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
168-Tm-00	478570	5433867	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173-Tm-00	479541	5442098	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
178-Tm-00	476282	5438147	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
207-Tm-00	487195	5433331	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
214-Tm-00	490133	5422331	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
221-Tm-00	484988	5420771	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
238-Tm-00	478680	5407209	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
247-Tm-00	499747	5432466	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
254-Tm-00	498367	5427658	Tr	0.25	0	0	0	0	1	1	0	0	1	1	0	0	0	0
267-Tm-00	499489	5423446	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
277-Tm-00	474197	5412060	0	0	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
283-Tm-00	472848	5418069	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
288-Tm-00	473301	5408515	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
293-Tm-00	499575	5410531	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
298-Tm-00	473228	5424462	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
305-Tm-00	469983	5409065	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
351-Tm-00	492504	5409192	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
356-Tm-00	471641	5409544	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
373-Tm-00	470775	5402459	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
434-Tm-00	484402	5430696	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0
439-Tm-00	488695	5428153	4	4	0	0	Tr	0.25	1	1	0	0	0	0	0	0	0	0
448-Tm-00	496533	5417684	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1006-Tm-00	484537	5436937	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1011-Tm-00	499802	5452292	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1020-Tm-00	498531	5448365	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1027-Tm-00	497791	5443425	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1052-Tm-00	484016	5447109	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1066-Tm-00	479556	5447053	1	1	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1071-Tm-00	483325	5451473	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1082-Tm-00	480044	5453557	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample	U.T.M.'s		MA- MMSIMs													
Number	Easting	Northing	Ng		Ol		Or	(%)	Py		Rr		Sa		SaCor	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1321-Ma-00	481400	5428300	1	1	0	0	1	1	0	30	0	0	0	0	0	0
1323-Ma-00	478946	5427213	0	0	0	0	3	3	10	10	0	0	0	0	0	0
1325-Ma-00	480197	5423539	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1327-Ma-00	481915	5417579	0	0	0	0	5	5	0	20	0	0	0	0	0	0
1329-Ma-00	485579	5414207	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
12-Tm-00	483601	5442135	0	0	0	0	Tr	0.25	3	3	0	0	0	0	0	0
33-Tm-00	494850	5448000	0	0	0	0	0	0	2	2	0	0	0	0	0	0
52-Tm-00	495804	5442936	0	0	0	0	Tr	0.25	2	2	4	4	0	0	0	0
73-Tm-00	493530	5454299	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
78-Tm-00	494737	5435257	0	0	0	0	0	0	0	0	2	2	0	0	0	0
83-Tm-00	494798	5434715	0	0	0	0	0.5	0.5	0	0	0	0	0	0	0	0
88-Tm-00	492668	5426882	0	0	0	0	2	2	10	10	0	0	0	0	0	0
117-Tm-00	486233	5429330	0	0	0	0	7	7	0	0	0	0	0	0	0	0
159-Tm-00	479053	5437975	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
168-Tm-00	478570	5433867	0	0	0	0	0	0	0	0	0	0	0	0	0	0
173-Tm-00	479541	5442098	0	0	0	0	4	4	0	0	1	1	0	0	0	0
178-Tm-00	476282	5438147	2	2	0	0	Tr	0.25	0	0	0	0	0	0	0	0
207-Tm-00	487195	5433331	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
214-Tm-00	490133	5422331	1	1	0	0	1	1	2	2	0	0	0	0	0	0
221-Tm-00	484988	5420771	1	1	0	0	2	2	0	15	0	0	0	0	0	0
238-Tm-00	478680	5407209	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
247-Tm-00	499747	5432466	0	0	0	0	0	0	0	0	0	0	0	0	0	0
254-Tm-00	498367	5427658	1	1	0	0	Tr	0.25	0	0	0	0	0	0	0	0
267-Tm-00	499489	5423446	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
277-Tm-00	474197	5412060	1	1	0	0	Tr	0.25	0	0	0	0	0	0	0	0
283-Tm-00	472848	5418069	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
288-Tm-00	473301	5408515	0	0	0	0	Tr	0.25	0	0	0	0	1	1	0	0
293-Tm-00	499575	5410531	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
298-Tm-00	473228	5424462	0	0	0	0	2	2	0	0	0	0	0	0	0	0
305-Tm-00	469983	5409065	0	0	0	0	Tr	0.25	0	20	0	0	0	0	0	0
351-Tm-00	492504	5409192	0	0	0	0	2	2	0	30	0	0	0	0	0	0
356-Tm-00	471641	5409544	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
373-Tm-00	470775	5402459	0	0	0	0	0	0	0	0	0	0	0	0	0	0
434-Tm-00	484402	5430696	0	0	0	0	2	2	0	500	0	0	0	0	0	0
439-Tm-00	488695	5428153	0	0	0	0	Tr	0.25	0	1500	0	0	0	0	0	0
448-Tm-00	496533	5417684	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1006-Tm-00	484537	5436937	0	0	0	0	Tr	0.25	10	10	0	0	0	0	0	0
1011-Tm-00	499802	5452292	0	0	0	0	Tr	0.25	5	5	0	0	0	0	0	0
1020-Tm-00	498531	5448365	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1027-Tm-00	497791	5443425	0	0	0	0	Tr	0.25	0	20	0	0	0	0	0	0
1052-Tm-00	484016	5447109	0	0	0	0	Tr	0.25	0	500	0	0	0	0	0	0
1066-Tm-00	479556	5447053	1	1	0	0	Tr	0.25	0	300	0	0	0	0	0	0
1071-Tm-00	483325	5451473	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1082-Tm-00	480044	5453557	1	1	0	0	2	2	2	2	2	2	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs									
	Easting	Northing	Si	(%)	Sph		Sps	(%)	Sp		St	(%)
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1321-Ma-00	481400	5428300	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1323-Ma-00	478946	5427213	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1325-Ma-00	480197	5423539	Tr	0.25	0	0	0	0	0	0	0.5	0.5
1327-Ma-00	481915	5417579	Tr	0.25	0	0	0	0	0	0	2	2
1329-Ma-00	485579	5414207	Tr	0.25	0	0	0	0	0	0	Tr	0.25
12-Tm-00	483601	5442135	0	0	0	0	0	0	0	0	0	0
33-Tm-00	494850	5448000	0	0	0	0	0	0	0	0	Tr	0.25
52-Tm-00	495804	5442936	Tr	0.25	0	0	0	0	0	0	Tr	0.25
73-Tm-00	493530	5454299	Tr	0.25	0	0	0	0	0	0	Tr	0.25
78-Tm-00	494737	5435257	Tr	0.25	0	0	0	0	1	1	Tr	0.25
83-Tm-00	494798	5434715	Tr	0.25	0	0	0	0	0	0	Tr	0.25
88-Tm-00	492668	5426882	0	0	0	0	0	0	0	0	Tr	0.25
117-Tm-00	486233	5429330	Tr	0.25	0	0	0	0	0	0	Tr	0.25
159-Tm-00	479053	5437975	Tr	0.25	0	0	0	0	0	0	Tr	0.25
168-Tm-00	478570	5433867	0	0	0	0	0	0	0	0	0	0
173-Tm-00	479541	5442098	0	0	0	0	0	0	0	0	Tr	0.25
178-Tm-00	476282	5438147	0	0	0	0	0	0	0	0	Tr	0.25
207-Tm-00	487195	5433331	Tr	0.25	0	0	0	0	0	0	Tr	0.25
214-Tm-00	490133	5422331	Tr	0.25	0	0	0	0	0	0	Tr	0.25
221-Tm-00	484988	5420771	Tr	0.25	0	0	0	0	0	0	0.5	0.5
238-Tm-00	478680	5407209	Tr	0.25	0	0	0	0	0	0	0.5	0.5
247-Tm-00	499747	5432466	Tr	0.25	0	0	0	0	0	0	Tr	0.25
254-Tm-00	498367	5427658	Tr	0.25	0	0	0	0	0	0	Tr	0.25
267-Tm-00	499489	5423446	Tr	0.25	0	0	Tr	0.25	0	0	Tr	0.25
277-Tm-00	474197	5412060	Tr	0.25	0	0	0	0	0	0	Tr	0.25
283-Tm-00	472848	5418069	Tr	0.25	0	0	0	0	0	0	Tr	0.25
288-Tm-00	473301	5408515	Tr	0.25	0	0	0	0	0	0	Tr	0.25
293-Tm-00	499575	5410531	0	0	0	0	0	0	0	0	Tr	0.25
298-Tm-00	473228	5424462	0	0	0	0	0	0	0	0	Tr	0.25
305-Tm-00	469983	5409065	0	0	0	0	Tr	0.25	0	0	1	1
351-Tm-00	492504	5409192	0	0	0	0	Tr	0.25	0	0	Tr	0.25
356-Tm-00	471641	5409544	0	0	0	0	0	0	0	0	3	3
373-Tm-00	470775	5402459	0	0	0	0	0	0	0	0	0	0
434-Tm-00	484402	5430696	0	0	0	0	0	0	0	0	Tr	0.25
439-Tm-00	488695	5428153	0	0	0	0	0	0	0	0	Tr	0.25
448-Tm-00	496533	5417684	0	0	0	0	0	0	0	0	Tr	0.25
1006-Tm-00	484537	5436937	0	0	0	0	0	0	0	0	Tr	0.25
1011-Tm-00	499802	5452292	0	0	0	0	0	0	0	0	Tr	0.25
1020-Tm-00	498531	5448365	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1027-Tm-00	497791	5443425	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1052-Tm-00	484016	5447109	0	0	0	0	0	0	0	0	Tr	0.25
1066-Tm-00	479556	5447053	0	0	0	0	Tr	0.25	0	0	0.5	0.5
1071-Tm-00	483325	5451473	0	0	0	0	0	0	0	0	Tr	0.25
1082-Tm-00	480044	5453557	Tr	0.25	0	0	0	0	0	0	Tr	0.25

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	An		Ba		Ch		Co		Cr		Cru		Fl		Gah	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1091-Tm-00	494172	5421125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100-Tm-00	475720	5450847	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1119-Tm-00	488634	5453728	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1128-Tm-00	488668	5449676	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1141-Tm-00	470560	5445620	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1152-Tm-00	474239	5446841	0	0	0	0	2	2	0	0	1	1	0	0	0	0	0	0
1178-Tm-00	498183	5417268	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0
1187-Tm-00	496271	5413982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200-Tm-00	487606	5407888	0	0	0	0	0	0	0	0	8	8	0	0	0	0	0	0
1213-Tm-00	484966	5406754	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1224-Tm-00	480040	5401911	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1240-Tm-00	466236	5403996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1245-Tm-00	464154	5406430	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs															
	Easting	Northing	Gth (%)		Gr		Ky (%)		Ldc		Lo		Me		Mo		Ms	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1091-Tm-00	494172	5421125	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1100-Tm-00	475720	5450847	0.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1119-Tm-00	488634	5453728	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1128-Tm-00	488668	5449676	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1141-Tm-00	470560	5445620	Tr	0.25	0	0	Tr	0.25	0	0	0	0	0	0	0	0	0	0
1152-Tm-00	474239	5446841	Tr	0.25	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1178-Tm-00	498183	5417268	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1187-Tm-00	496271	5413982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1200-Tm-00	487606	5407888	Tr	0.25	0	0	0	0	33	45	0	0	0	0	0	0	0	0
1213-Tm-00	484966	5406754	Tr	0.25	0	0	0	0	1	1	0	0	0	0	0	0	0	0
1224-Tm-00	480040	5401911	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1240-Tm-00	466236	5403996	90	90	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1245-Tm-00	464154	5406430	Tr	0.25	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs													
	Easting	Northing	Ng		Ol		Or (%)		Py		Rr		Sa		SaCor	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1091-Tm-00	494172	5421125	0	0	0	0	0	0	0	400	0	0	0	0	0	0
1100-Tm-00	475720	5450847	0	0	0	0	0	0	5	5	0	0	0	0	0	0
1119-Tm-00	488634	5453728	0	0	0	0	Tr	0.25	8	8	0	0	0	0	0	0
1128-Tm-00	488668	5449676	0	0	0	0	4	4	0	0	0	0	0	0	0	0
1141-Tm-00	470560	5445620	0	0	0	0	1	1	0	150	0	0	0	0	0	0
1152-Tm-00	474239	5446841	0	0	0	0	3	3	0	1500	1	1	0	0	0	0
1178-Tm-00	498183	5417268	0	0	0	0	1	1	1	1	0	0	0	0	0	0
1187-Tm-00	496271	5413982	0	0	0	0	Tr	0.25	0	0	0	0	0	0	0	0
1200-Tm-00	487606	5407888	0	0	0	0	0	0	2	2	0	0	0	0	0	0
1213-Tm-00	484966	5406754	0	0	0	0	Tr	0.25	0	15	1	1	0	0	0	0
1224-Tm-00	480040	5401911	0	0	0	0	Tr	0.25	4	4	0	0	0	0	0	0
1240-Tm-00	466236	5403996	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1245-Tm-00	464154	5406430	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Appendix 2 (Continued)

Overburden Drilling Management Limited Indicator Mineral Counts (Continued)

Sample Number	U.T.M.'s		MA- MMSIMs									
	Easting	Northing	Si (%)		Sph		Sps (%)		Sp		St (%)	
			Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.	Pic.	Est.
1091-Tm-00	494172	5421125	0	0	0	0	0	0	0	0	Tr	0.25
1100-Tm-00	475720	5450847	0	0	0	0	0	0	0	0	Tr	0.25
1119-Tm-00	488634	5453728	Tr	0.25	0	0	0	0	0	0	0	0
1128-Tm-00	488668	5449676	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1141-Tm-00	470560	5445620	Tr	0.25	0	0	0	0	0	0	4	4
1152-Tm-00	474239	5446841	Tr	0.25	0	0	0	0	0	0	Tr	0.25
1178-Tm-00	498183	5417268	0	0	0	0	0	0	0	0	0	0
1187-Tm-00	496271	5413982	0	0	0	0	0	0	0	0	Tr	0.25
1200-Tm-00	487606	5407888	0	0	0	0	0	0	0	0	Tr	0.25
1213-Tm-00	484966	5406754	Tr	0.25	0	0	0	0	0	0	3	3
1224-Tm-00	480040	5401911	0	0	0	0	0	0	0	0	Tr	0.25
1240-Tm-00	466236	5403996	0	0	0	0	0	0	0	0	0	0
1245-Tm-00	464154	5406430	0	0	0	0	0	0	0	0	0	0

Metric Conversion Table

Conversion from SI to Imperial			Conversion from Imperial to SI		
SI Unit	*Multiplied by*	*Gives*	*Imperial Unit*	*Multiplied by*	*Gives*
		LENGTH			
1 mm	0.039 37	inches	1 inch	**25.4**	mm
1 cm	0.393 70	inches	1 inch	**2.54**	cm
1 m	3.280 84	feet	1 foot	**0.304 8**	m
1 m	0.049 709	chains	1 chain	20.116 8	m
1 km	0.621 371	miles (statute)	1 mile (statute)	**1.609 344**	km
		AREA			
1 cm^2	0.155 0	square inches	1 square inch	**6.451 6**	cm^2
1 m^2	10.763 9	square feet	1 square foot	**0.092 903 04**	m^2
1 km^2	0.386 10	square miles	1 square mile	2.589 988	km^2
1 ha	2.471 054	acres	1 acre	0.404 685 6	ha
		VOLUME			
1 cm^3	0.061 023	cubic inches	1 cubic inch	**16.387 064**	cm^3
1 m^3	35.314 7	cubic feet	1 cubic foot	0.028 316 85	m^3
1 m^3	1.307 951	cubic yards	1 cubic yard	0.764 554 86	m^3
		CAPACITY			
1 L	1.759 755	pints	1 pint	0.568 261	L
1 L	0.879 877	quarts	1 quart	1.136 522	L
1 L	0.219 969	gallons	1 gallon	**4.546 090**	L
		MASS			
1 g	0.035 273 962	ounces (avdp)	1 ounce (avdp)	28.349 523	g
1 g	0.032 150 747	ounces (troy)	1 ounce (troy)	**31.103 476 8**	g
1 kg	2.204 622 6	pounds (avdp)	1 pound (avdp)	**0.453 592 37**	kg
1 kg	0.001 102 3	tons (short)	1 ton (short)	**907.184 74**	kg
1 t	1.102 311 3	tons (short)	1 ton (short)	**0.907 184 74**	t
1 kg	0.000 984 21	tons (long)	1 ton (long)	**1016.046 908 8**	kg
1 t	0.984 206 5	tons (long)	1 ton (long)	**1.016 046 90**	t
		CONCENTRATION			
1 g/t	0.029 166 6	ounce (troy)/ ton (short)	1 ounce (troy)/ ton (short)	34.285 714 2	g/t
1 g/t	0.583 333 33	pennyweights/ ton (short)	1 pennyweight/ ton (short)	1.714 285 7	g/t

OTHER USEFUL CONVERSION FACTORS

	Multiplied by	
1 ounce (troy) per ton (short)	31.103 477	grams per ton (short)
1 gram per ton (short)	0.032 151	ounces (troy) per ton (short)
1 ounce (troy) per ton (short)	20.0	pennyweights per ton (short)
1 pennyweight per ton (short)	0.05	ounces (troy) per ton (short)

Note: Conversion factors which are in bold type are exact. The conversion factors have been taken from or have been derived from factors given in the Metric Practice Guide for the Canadian Mining and Metallurgical Industries, published by the Mining Association of Canada in co-operation with the Coal Association of Canada.